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BULLETIN
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PLACENTA ACCRETA*†

Report of a Case

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This subject was thoroughly and adequately covered in an excellent review in 1937 by Irving and Hertig (27). The purpose of the present paper is twofold: to review cases reported since then, only with the view of covering new ideas concerning the general subject of placenta accreta, and to report a case observed by the author.

Placenta accreta is a pathologic adherence to and/or invasion of the uterine wall by the placenta, with the absence particularly of the spongiosum layer of the decidua basalis, either in whole or in part. Generally speaking, there are three types: 1) placenta accreta, in which the placenta is adhered only pathologically; 2) placenta increta, in which there is, in addition, penetration of the uterine wall; and 3) placenta percreta, in which the uterine wall is invaded to its serosal layer and may actually rupture the uterus.

CASE REPORT

The patient, a 20 year old colored para 1-1-0-2, was admitted in labor to the Baltimore City Hospitals at 7:20 A.M. on February 22, 1942. The family and past histories were noncontributory. Her first pregnancy was terminated by midforceps rotation of a left occiput transverse to a left occiput anterior after prolonged labor. This was followed by acute endometritis of three weeks' duration. The second pregnancy was terminated prematurely by breech extraction, after which the adherent placenta was removed manually. Acute endometritis followed. The estimated date of confinement was May 13, 1942. During her prenatal course the patient was treated for acute pyelitis with bilateral hydronephrosis. On February 15, 1942 she was admitted because of bleeding. A sterile pelvic examination did not reveal a placenta previa and she was discharged after six days. Upon admission on February 22, 1942 she was fully dilated, with the breech presenting. She was delivered by breech extraction of a thirty weeks premature living female child weighing 3 pounds, 1¼ ounces. For the first hour and a half after delivery there was no bleeding except when the uterus was manipulated according to Credé's method, and then it was slight. One-half ampul of pitocin was given without producing results or bleeding. She was again prepared for sterile examination and the uterine cavity was explored manually under anesthesia and adrenalin. The lower pole of the placenta, which was situated anteriorly, could be palpated and separated for about one-third of its area. The upper pole was examined and no line of cleavage could be found. The diagnosis of placenta accreta was made. There was slight bleeding, so the uterus was not packed. A supravaginal hysterectomy was then done which was withstood satisfactorily, the patient receiving 1000 cc. of citrated blood prior to and during the operative procedure. The postoperative pulse rate was 100, with blood pressure of 140 mm. of mercury systolic and 80 mm. diastolic. Her postoperative course was uneventful, except for one elevation of temperature to 101 F. She was discharged on the thirteenth day.

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Gross pathology. The specimen of the uterus contained a placenta which was attached to the anterior wall and folded upon itself. It was attached firmly to the uterus for the upper two-thirds and separated at the lower one-third, which was covered with a blood clot. The cervix was large, soft, and slightly lacerated.

Microscopic pathology. The findings can be seen in Figures 1 and 2.

Diagnosis. Placenta accreta, partial.

Incidence. The first case of placenta accreta was reported by Plater (44). The incidence varies from 1:1956 as reported by Irving and Hertig (27), to 1:40,000 as reported by Hirst (24). The case reported here is the only one observed at the Baltimore City Hospitals since the institution of its maternity service, one in 17,464 deliveries. Curiously enough, at the University Hospital in Baltimore there never has been a case observed in the past twenty-four years in a total of 49,778 deliveries.

Irving and Hertig (27) found eighty-six cases in the literature and added twenty of their own. Seventy-three additional cases have been located, but this does not represent all those reported. Some of these references could not be obtained, mainly those in the recent German literature. This would appear to indicate that its frequency is increasing, whereas its recognition probably accounts for the greater number of cases reported. King (31), however, predicted that placenta accreta would become more common. He wrote, "The widespread and almost indiscriminate use of endocrines may produce a deleterious effect in the decidual function of the endometrium; further, the cure of certain types of sterility with endocrines may not be complete, in that pregnancy may occur in a uterus that is not fully prepared for physiological implantation. The increasing number of cesarean sections, many with an unrecognized low grade uterine infection, will leave more women with a damaged endometrium."

Etiology. Several interesting features concerning the etiology have come to light in this series. The most frequent reasons, of course, have been the manual or instrumental removal of the placenta in former pregnancies, and infection of the endometrium following previous delivery. In addition, four patients had fibroids. Noran (42) reported two cases in which radium therapy had been used prior to pregnancy for gynecologic disorders and suggested it as an etiologic factor. Two patients had previous sections. In one, the case reported by King (31), the placenta had burrowed into the uterine scar. There was one patient who had tuberculous peritonitis and there is a possibility that she also had tuberculous endometritis. In one of Otto and Rechnitz's (43) cases two therapeutic abortions had been performed, and in a third pregnancy a placenta accreta was observed during a third therapeutic abortion. Tiemeyer (60) suggested a hormonal theory.

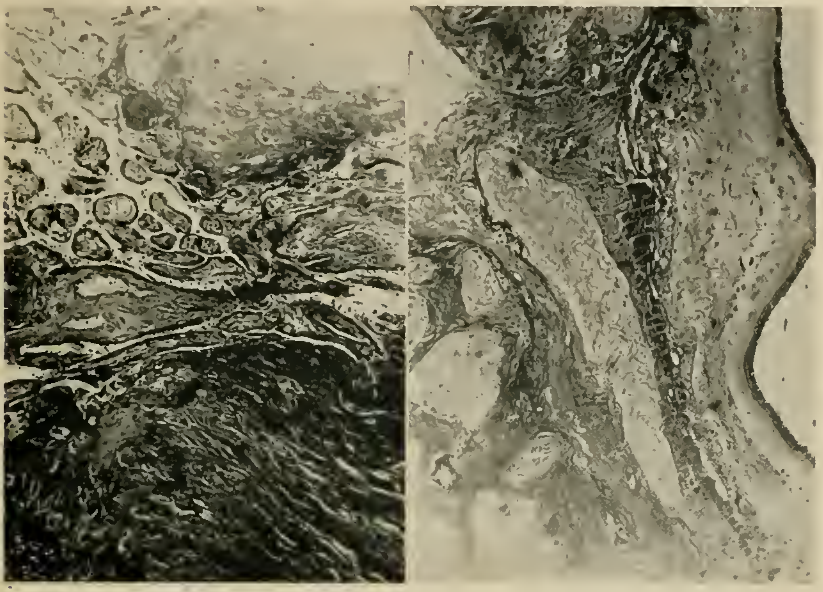

Fig. 1 Fig. 2

Fig. 1. This section is taken through the placenta and the uterus at the point of attachment. The chorionic villi for the most part show a slight amount of fibrosis, which is normal for this stage of the process. At the attachment the decidua basalis or serotina is only a few cell layers thick and in places there is direct attachment of the chorionic villi to the muscle. The trophoblastic layer is hyalinized and fused directly with the myometrium. In this zone are found many lymphocytes and few polymorphonuclear leukocytes. Much scarring of the zone is seen. The myometrium is extremely vascular. The cells are hypertrophied but otherwise well preserved.

Fig. 2. A chorionic membrane is found in this section and the underlying structure is composed of a few decidual cells. Under this scant decidua are hyalinized chorionic villi which invade the myometrium. The entire zone of attachment is hyalinized and scarred.

Since progesterone promotes the development of the decidua, abnormalities of the corpus luteum may have an important bearing upon the formation of this anomaly by causing a defective decidua. In addition, he believed, the fault may lie within the ovum, in which the erosive power of the trophoblast may be stimulated excessively and the villi destroy the decidua basalis and bury their way into the muscularis. The main factors involved are apparently some injury to the endometrium, either by trauma, infection, associated gynecologic disorders or, as King (31) and Tiemeyer (60) suggested, by endocrine therapy or endocrine imbalance. Table I lists the etiologic factors disclosed in this series.

Parity. Sixty-one authors reported on the parity in their cases. Eleven were primigravidas, nineteen were secundigravidas, ten were experiencing their third pregnancy, and in the remainder the number of pregnancies varied from four to seventeen. Of the eleven primigravidas two had fibroids; one had a cervical cyst; another became pregnant after a supravaginal hysterectomy and progressed to the thirty-second week; tuberculous peritonitis was a factor in one; one had a dilation and curettage; and no specific cause was found in five instances. From this data it may be surmised that traumatic injury and local disease may be necessary factors for placenta accreta in the majority of cases.

TABLE I

Etiology

Manual removal of placenta	10
Dilation and curettage	9
Endometritis	9
Previous section	2
Retained placenta	1
Prolonged labor	1
Fibroids	4
Therapeutic abortion	1
Radium therapy	2
Tuberculous peritonitis	1
Large cervical cyst	1
Not stated	32

Duration of pregnancy. Premature delivery was common and occurred in nineteen cases, or 26 per cent. This was also true in the case reported here. In eight of these premature deliveries the uterus had ruptured because of the invasion of the placenta through the entire uterine wall. Two cases of placenta accreta were discovered incidentally during therapeutic abortions. In two, fibroids were found responsible for the premature labor. In one case each there was eclampsia, premature rupture of the membranes, previous supravaginal hysterectomy, placenta previa, spontaneous abortion, and vaginal hysterectomy; in one instance the cause of the premature labor was not recorded.

Pathology. Normally, placental separation takes place in the spongiosum layer of the decidua basalis. This area, which is filled with blood sinuses, becomes even more hyperemic with a large extravasation of blood and forms the retroplacental hematoma. Then the thin overlying muscle contracts, separating the placenta from the uterus. This separation cannot take place in placenta accreta, where the spongy layer in the decidua basalis is absent and sometimes even the entire layer of the decidua basalis is missing. The villi have burrowed into the myometrium or into the myometrial veins, thereby forming a firm union between the placenta and the uterine wall. In the majority of placentas examined in this review the decidua basalis in whole or in part was absent. Upon examination the decidua vera was frequently abnormal, from which it could be assumed that the endometrial bed, into which the placenta imbedded, was barren and ill suited for nidation.

The placenta accreta was complete in twenty-one cases, partially attached in twenty-six instances, and not reported in twenty-six cases. Generally it is true that the partial type is more often seen than the complete, so that the classical sign of absolutely no hemorrhage during the third stage is frequently not correct; actually, it is more often not true, since part of the placenta will separate in most cases.

A study of the accompanying pathologic conditions which were present before pregnancy, or which were caused by the pathologic change of the placenta itself or were a result of treatment, is interesting. Spontaneous rupture of the uterus by the placenta was found in eleven cases. The uterus was ruptured by attempted manual extraction five times. In one instance the uterus was perforated by a curet. This makes a total of seventeen peritoneal invasions, either spontaneous or traumatic, or 23.3 per cent. There can be no doubt that this complication is one of major importance. Placenta previa was a complication eight times. Fibroids may have been an etiologic factor in four cases. There were three inversions of the uterus, once during attempted manual removal and twice during the Credé maneuver. In view of the infrequency of this complication of the third stage and the rarity of placenta accreta, placenta accreta can be considered a definite etiologic factor in inversion. A hydatidiform mole, pregnancy after supravaginal hysterectomy, and a large cervical cyst each were found once (Table II).

Operative interference for delivery. It is of value to note that in fifteen cases the diagnosis was made at the time of cesarean section, the indications being placenta previa, fibroids, disproportion, and other pathologic conditions. Thirty-seven patients delivered either spontaneously, by low forceps, or by breech extraction, without complications. Two had abdominal hysterectomies for therapeutic abortions and sterilization and the placenta accreta was found incidentally. The same may be said concerning the therapeutic abortion which was done through the vaginal route for chronic nephritis. One patient each delivered by vaginal cesarean section, vaginal hysterectomy, and laparotomy. It is obvious that the operative delivery incidence found in about one-third of the cases is necessarily increased when the pregnancy is complicated by placenta accreta.

Symptomatology. The symptoms of complete placenta accreta are silent ones. There is no bleeding because obviously there is no placental separation. Only bleeding from lacerations in the genital tract is encountered. The uterus does not show any signs of separation, regardless of the vigor of the Credé maneuver. The patient shows no evidence of shock or blood loss unless there is an accompanying rupture or inversion of the uterus. The partial type, on the other hand, presents the classical signs of a partially separated and retained placenta. Moderate to profuse hemorrhage is noted. There is evidence of placental separation. The patient gradually goes into shock from the loss of blood. These latter symptoms require immediate and sufficient measure to counteract blood loss and shock, and the diagnosis should be made without delay to prevent disaster.

TABLE II

Associated Pathology

Spontaneous rupture	11
Rupture on attempted removal	5
Perforation, instrumental	1
Placenta previa	8
Inversion of the uterus	3
Fibroids	4
Cervical cyst, large	1
Pregnancy after supravaginal hysterectomy	1
Hydatidiform mole	1

Treatment. The results of treatment recorded in this review might have a tendency to influence one to treat the complete type of placenta accreta in a much more conservative manner. As recognized for many years, the advisability of abdominal hysterectomy as a means of therapy is obvious. The adequacy and reliability of such treatment are confirmed in this review. Forty-five patients had hysterectomies and thirty-eight lived. Eleven were treated by manual removal, eight of whom died. One patient was treated successfully by instrumental removal and packing. Four patients died before any treatment could be given. There were three deaths from shock and hemorrhage following inversion of the uterus. One patient died on admission to the hospital after her uterus had been ruptured for two days through the scar of an old section (23). In one of King's (31) cases a hysterectomy was contemplated, but the patient died of hemorrhage before operation. In Bolaffio's (3) case the uterus ruptured and the patient died immediately after delivery through the vaginal canal (Table III).

The group that created the most interest, however, was the one in which the patients were treated conservatively, either because of necessity or intentionally. In these the placenta was allowed to remain intact without attempts at removal and no operative procedure was followed other than packing or draining. Seven patients were treated in this manner and all survived. Schumann (51) reported four cases in Philadelphia in which the diagnosis was made by manual exploration of the uterine cavity without any effort of removal when a cleavage plane could not be found, the uterus was then packed and the pack removed in twenty-four hours. The puerperium in these patients was complicated but not alarmingly so. *Two of these patients have since conceived and borne children successfully and had no pathologic process connected with the third stage.* A fifth case reported by Potter (45) in a primigravida had multiple fibroids, interstitial in character, and numerous adhesions; being a poor operative risk she was drained abdominally and cervically. A sixth case reported by Futh (18) was treated for a partial placenta accreta by extraperitoneal ligation of the hypogastric arteries with an absorbent suture material, so that the arterial supply would return after a few days. Futh also recommended this procedure for placenta previa. Another patient who was a poor surgical risk was treated conservatively by Anderson (1) and after many complications she recovered. The uterus was removed thirteen weeks later without any evidence of placental tissue.

TABLE III

	LIVED	DIED
Hysterectomy	38– 84.4%	7– 13.6%
Manual removal	3– 27.3%	8– 72.7%
Instrumental removal	1–100.0%	0– 00.0%
Died before therapy	0– 00.0%	4–100.0%
Treated conservatively	7–100.0%	0– 00.0%

The results of Schumann (51), Anderson (1), Potter (45), and Futh (18), merit further consideration in connection with the proper treatment of complete placenta accreta. Certainly in the partial type, where the symptoms are those of postpartum hemorrhage with a retained placenta and where packing would most likely be inadequate for control of the hemorrhage, this type of therapy is not indicated and hysterectomy is the procedure of choice.

Adequate blood replacement is indispensable and its lack probably played a part in the fatal outcome of some of the patients who died following hysterectomy. On the other hand, if the placenta is completely attached, where there will be no hemorrhage and the patient is in good physical condition, it is likely that conservative therapy with supportive treatment during the next few days, and possibly sulfa and penicillin medication, would be more advantageous. Thus, more uteri would be saved, and these mothers would again have an opportunity to become pregnant and a fairly good chance of avoiding a similar complication with the succeeding pregnancy. Wilson (64) reported a case of frank intrapartum infection in which the placenta would not separate. Four days later the placenta delivered spontaneously without any increase in infection during that period of time. This may be used as a further argument for the procedure of noninterference in the treatment of placenta accreta where there is no bleeding and particularly in the presence of infection.

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LÖFFLER'S SYNDROME*†

A Review of the Literature and the Report of a Case

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The American literature has during the latter few years produced numerous reports, editorials, and comments relating to the subject of "Transitory Pulmonary Infiltrations with Eosinophilia." In 1932 Löffler (20) first described this previously unrecognized condition which frequently is referred to as "Löffler's Syndrome." In 1936 he published his second report of the disease, which brought the total number of cases seen in his clinic to fifty-one; no other author has reported such a large series. The majority of the reports have emanated from the central European area, so that recently the question has been raised whether this is attributable to the geographic distribution of the disease, unfamiliarity with the syndrome, or lack of alertness on the part of clinicians (26). Since many American physicians have been cognizant of the process and only occasional instances of the malady have been reported by them, it would appear that it is relatively uncommon in this part of the world. Baer (1) is in accord with this opinion.

The frequency of the condition in Europe is further substantiated by the results of a recent systematic fluoroscopic examination of 6083 men about to be discharged from military service (10). In this survey fifty-five instances of pulmonary abnormality were discovered; twenty of these were diagnosed as active tuberculosis and thirteen as eosinophilic infiltrations.

The present program of mass roentgenography of the lungs initiated as a routine part of the examination of youths of Army age, and the extension of this program to civilians through the efforts of the tuberculosis associations, public health authorities, and industry would indicate that a number of these infiltrations will be unearthed. It is fitting, therefore, that the condition again be called to the attention of the medical profession. Ordinarily, the finding of shadows in routine chest roentgenograms of apparently healthy individuals is assumed to be caused by tuberculosis until otherwise proved, and this is as it should be. However, the similarity between the symptoms of tuberculosis and those of the syndrome under discussion is so great that unless it is kept in mind and blood studies as well as follow-up studies are made, errors in diagnosis may be anticipated. This was emphasized by several authors (13, 16) who reported a number of cases of

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transient pulmonary infiltrations with eosinophilia which were diagnosed erroneously as tuberculosis and the patients sent to sanatoriums.

The roentgenogram offers the maximum information concerning the process and is usually the means whereby discovery is made, often as a result of routine roentgenography rather than during the course of study warranted by symptoms. The roentgenogram reveals shadows, infiltrations or consolidations which have no distinctive features with regard to their appearance. They may be spotty or homogeneous, sharply or ill defined, of any size of shape, occurring singly or plurally in one or both lungs. The lesions may occur in any part of the lungs. Cattaneo (6), however, thought that ordinarily the lesions involve the subclavicular region of the right lung, whereas Miller (25) felt that the lower lung fields are the more frequent sites of predilection. Löffler (20) emphasized the fugitive nature of the lesions, which appear suddenly and may disappear with even greater dispatch, often to reappear in another area. He further reported that occasionally in addition to the pulmonary involvement there occurs a pleural reaction which may be associated with a small effusion.

According to Löffler, any individual shadow which persists for more than a fortnight cannot be considered to belong to this complex. In a number of subsequent reports (3, 8), however, cases have been described in which the duration has exceeded this time limit. Leon-Kindberg and his collaborators (19) described a case of eosinophilic pneumonopathy which lasted six months. The patient had an eosinophilia and serial roentgenograms showed the development, disappearance, and recurrence of the foci. They felt that they were not dealing with Löffler's syndrome. Kartagener (17), who observed a case over a period of fifteen months, suggested that three forms of eosinophilic pulmonary infiltrations be recognized: 1, The Löffler type which represents an acute process of short duration; 2, the group described independently by Loehr and Leon-Kindberg et al., in which the acute symptoms are severe and septic-like, the lesions often persisting for months; 3, the type observed by him which is characterized by chronicity and mildness of symptoms.

The symptoms are often entirely lacking and, as already mentioned, discovery of the disease frequently is made during routine chest roentgenography, the individuals being astonished when apprised of the situation. When present the symptoms may be of a mild nature and present either a sudden or insidious onset consisting of indefinite weakness and fatigue, and slight or severe cough with or without pain; fever may be absent or of a low grade. The patient usually reports to the physician's office instead of summoning him to the bedside, and it is the physician who is amazed at the paucity of symptoms and physical signs, even in the presence of extensive disease. Occasionally the fever may be high, accompanied by considerable dyspnea and an ipsilateral or retrosternal sense of oppression. The sputum is generally scant and may be clear, yellowish or mucopurulent; at times it is entirely absent. Hemoptysis rarely occurs. Asthma and extrapulmonary conditions, such as eczema, angioneurotic edema, and hives occasionally are found to be associated with the syndrome.

The physical examination is disappointing in that it often reveals nothing or only a slight impairment of the percussion note and, at times, a few medium râles. This is in sharp contrast to the assertion by Freund and Samuelson (11) that "There appears to be no doubt that the clinical observations in the lung which indicate infiltration, whether cellular, exudative or atelectatic, can always be established by careful percussion and auscultation." As one of the four cardinal symptoms of the disease they mention "Signs of pulmonary disease on auscultation and percussion." However, one is veritably amazed at the complete lack or paucity of physical signs in spite of extensive lesions, as in the case herein reported.

The laboratory studies are of paramount importance, ranking second only to the roentgenogram in recognizing the condition. The sputum at times contains a few eosinophilic cells, but no tubercle bacilli or elastic fibers. The hematologic studies reveal a normal to moderately elevated leukocyte count and a slight to definite eosinophilia. Löffler (20) reported an eosinophilia of 66 per cent in one of his cases. Since that time several authors have recorded even higher percentages. Steiger (32) believed that in order to establish the diagnosis the eosinophils should reach at least 8 to 10 per cent of the total leukocyte count. Söderling (30), on the other hand, placed less stress on the degree of eosinophilia and felt that it might be temporary or absent. In general, the maximal eosinophilia occurs immediately after the maximal pulmonary shadows; however, there is no strict parallelism with regard to the size or number of the lesions, the percentage of eosinophils, or the total leukocyte count. As a rule, the sedimentation rate of the erythrocytes is slightly to moderately elevated. The tuberculin test is negative in about one-third of the cases.

The etiology has evoked much speculation and controversy. Although there is no unanimity of opinion at present, the majority of authors favor the probability of hypersensitiveness to one or more allergens. At various times a number of etiologic possibilities have been discussed, such as infarction, pneumonia, bronchial asthma, atelectasis, tuberculosis, and helminthiasis. Recognition is due Löffler for a comprehensive analysis and critical review of the possible causes, to which little has been added except stressing of the hypersensitive basis. In his original communication he wrote that the condition could resolve as a pneumonic process but that it did not correspond to any recognized type and must be segregated roentgenographically and clinically, so that a special oligosymptomatic form of pneumonia was possible. He further called attention to the similarity to early pulmonary tuberculosis, both from a clinical as well as a roentgenographic viewpoint, and he considered the possibility of a practically reversible tuberculous process. In a discussion of Löffler's later report (21) several opinions were expressed. Oeri felt that in some instances there was a relationship to tuberculosis. Wernli and Haessig reported a case in which the process lasted thirteen days, and seven months later a tuberculous lesion developed in the opposite lung. This, of course, did not establish a definite relationship. Geiger observed fifteen cases in tuberculous patients and their contacts, but in no instance did tuberculosis develop later. Wieland thought that the frequently negative tuberculin test militated against tuberculosis, and since most cases developed during July and August he believed that the climatic influence might be important and suggested that exposure to sunlight should be considered as an etiologic factor. During the same discussion Rohner reported the syndrome in himself; it lasted seventeen days and was followed by edema of the hands, ears, and nose during the fifth week after onset.

In Barker's review of the subject (2) he cited Breton, who wrote that the syndrome occurs in 5 to 8 per cent of asthmatic patients and that it probably is caused by tuberculosis. Cardis (5) described an instance in a tuberculous patient and Leitner (18) reported several cases in tuberculous patients. The latter emphasized that although hyperergic infiltration of the lungs may result from various causes, one should first consider the possibility of tuberculosis.

Apparently unaware of the complex as an entity it is notable that before Löffler's original communication Vaughan (33) in 1931 reported a case of angioneurotic edema with numerous visceral manifestations, including "edema of pulmonary tissue." The roentgenogram was suggestive of a tuberculous involvement and the lesion disappeared promptly after the administration of epinephrine. One may well wonder whether this was really an instance of Löffler's syndrome. In 1933 Cole and Korns (7) recorded an instance of recurrent pulmonary involvement associated with angioneurotic edema. Except for the fact that this patient died, it also had some resemblance to the syndrome.

In 1941 Harkavy (14) reported a series of eight cases of recurrent pulmonary infiltrations and eosinophilic polyserositis in patients suffering from asthma, which he believed differed from the complex under discussion primarily because of the long duration of the attacks and the large effusions. He described the pulmonary lesions in such patients as insidious in onset, migratory in nature, miliary and interstitial in distribution, and occasionally exudative, simulating tuberculosis, and presenting few physical signs. In spite of some deviation from the more or less accepted criteria for Löffler's syndrome, it may not be too questionable that these cases were also instances of this process. Schulze (27) studied a patient with the syndrome who was seriously ill for a period of nine months. This patient had asthmatic attacks and an eosinophilia of 25 to 68 per cent. He cited Braenig, who concluded that the process was an asthma-like condition and spoke of it as "partial asthma." A number of reports (1, 8, 27, 29) have dealt with instances of pulmonary infiltrations with eosinophilia and asthma.

Maier (22) in a study of more than 100 cases, not his own, was convinced that patients with temporary eosinophilic pulmonary infiltrations are allergic. He regarded temporary infiltrations in those suffering from asthma as pathogenically identical with eosinophilic infiltrations.

The possibility of intestinal parasites as etiologic factors has received much comment and some authors assert that helminthiasis plays a prominent rôle. Löffler (20) mentioned the work of Koino, who in 1922 reported that by the ingestion of 2000 Ascaris eggs he was able to produce in himself a pulmonary consolidation associated with high fever, and that he was able to recover the larvae from his sputum. Although this experiment cannot be refuted as such, it has been pointed out that it is inconceivable that anyone could ingest such a large number of eggs, except experimentally. It has further been stressed that no one has ever demonstrated Ascaris larvae in the sputum.

Schulze (27) referred to Müller, who described the syndrome in three colleagues and himself which he attributed to the eating of cress grown in a greenhouse where swine, horse, and human manure was used. In this instance the eggs of Ascaris lumbricoides of man and swine and of Ascaris megalocephala of horses could have played a part. His conviction was such that as an experiment he later ingested three teaspoonfuls of earth from the greenhouse in question; eight days later typical pulmonary symptoms with an eosinophilia of 19 per cent appeared He further contended that his observations served to explain the predominance of the process during the months of May to August, when salads are consumed more freely. Hoff and Hicks (15) wrote of a case associated with amebiasis and cited Stefano, who reported an instance of recurring asthmatic attacks in which there were transient pulmonary infiltrations with amebas in the sputum but not in the stool. Both amebas and asthma disappeared after the institution of emetine therapy. They also referred to Laviere et al., who discussed a case associated with the helminth Fasciola hepatica. Berk (4) called attention to the fact that transitory pulmonary infiltrations are known to occur in patients infected with Necator americanus and perhaps even more commonly in those infected with Strongyloides.

Stachelin (31) reported that the eosinophilia suggests an allergic nature of the condition. He felt that presumably the toxins of the parasite Ascaris lumbricoides produce a hypersensitivity and the larvae, during their stay in the lungs, give rise to an allergic inflammatory reaction in the form of exudate. Reference again was made to the Ascaris lumbricoides by Smith and Alexander (28). They mentioned two patients of Wild and Loertscher who were infected with Ascaris lumbricoides; these latter authors considered the pulmonary shadows to be caused by the passage of larvae through the lungs. Since the larvae of Ascaris lumbricoides are not found in the sputum (9), there is still a question whether or not the infiltrations represent a purely allergic inflammatory reaction in response to the Ascaris toxin.

Söderling (30) believed that Engel made a most significant contribution to the knowledge of this syndrome in his reports of the so-called privet cough, which is identical or at least similar to the condition under discussion. Privet is the name of a species of Ligustrum which flowers in China during the months of May and June, at which time a large percentage of the population is affected by a peculiar bronchitis that is characterized by minor systemic symptoms and a moderately intense cough with a scant metallic-tasting canary yellow sputum. The patients, as a rule, are not extremely ill and usually do not even consult a physician. Engel became interested in the process when he had two attacks of massive pulmonary consolidation with eosinophilia which lasted one and six days respectively. These attacks did not incapacitate him. He suggested the allergic genesis of the condition and proposed the name "Oedema Allergicum Pulmonis." In Switzerland his idea was not accepted too readily because the cases in that country did not occur at the time of the blossoming of the Ligustrum. Meyer (24) reported eight instances, one of which probably was attributable to the pollen of Convallaria majalis, which he believed to be similar to the case described by Engel. He concluded that the lungs as well as the skin may react to allergens in the form of edema.

Frimodt-Möller and Barton (12) in India reported what they termed "the eosinophilic lung," which they frequently could identify by the roentgenogram alone. Because of the high incidence of helminthiasis and skin infections among the population of India, eosinophilia is common. In their report the authors considered only those instances of relatively high eosinophilia. In 5500 admissions they found 553 patients with 20 per cent or more eosinophils in the blood. Of these, 32 per cent had tubercle bacilli in the sputum; of the remainder 59.6 per cent had negative tuberculin reaction. These authors felt that they were not dealing with Löffler's syndrome because in some instances which were checked several years later there had been no change in the roentgenogram, blood picture, and at times in the symptoms.

In view of the benignity of the process pathologic studies had been entirely lacking until 1939, when Smith and Alexander (28) reported a case which came to necropsy. In discussing this case Bowen said that five pathologists who reviewed the microscopic sections could not agree that the diagnosis of Löffler's syndrome was tenable. In 1942 Meyenburg (23) reported the autopsy findings in four cases, in three of which the patients died as a result of accidents and the fourth of traumatic tetanus. He wrote that macroscopically the foci are not characteristic and may resemble bronchopneumonia or infarctions. A serous exudate is found regularly in the alveoli. It contains a variable quantity of fibrin and occasionally beginning organization may be demonstrable in some places. The eosinophil cells amount to between 70 and 100 per cent of the exudate cells, the balance being represented by alveolar cells, neutrophilic leukocytes, lymphocytes, and plasma cells. Giant cells of varying types were found in all but one case and they differed completely from Langhans' giant cells. In one instance two ascarides were found in the intestinal tract, and despite the lack of larvae Meyenburg believed that, theoretically, eosinophilic infiltrations may be caused by Ascaris even in the absence of worms in the intestines.

CASE REPORT

Mrs. C. J. S., a 44 year old white female, referred by Dr. F. Kadan, enjoyed good health until the present illness. Her past and family histories were noncontributory, except that her sister has pulmonary tuberculosis and is under the author's care. The patient had not lived with the sister for twenty-five years and the latter's illness has been controlled satisfactory by artificial pneumothorax.

The patient lived in one house for eighteen years; because it had been infested constantly with small red ants the use of insecticides to supress them had been necessary. In the early part of July, 1942, while using a new insecticide for the first time, the patient suddenly began to cough and experienced pain in the chest over the anatomic distribution of the larger bronchi. Within a few minutes "everything went black," and she had to lie down, whereupon she improved except for the cough and pain which persisted. After several days she developed moderate dyspnea and a sense of retrosternal oppression. During the next four weeks the symptoms fluctuated until July 28, when her temperature reached 102 F.; this was associated with a mild chill.

Several examinations were made but the findings failed to account for the symptoms. On July 29 a roentgenogram of the lungs was made. This revealed a surprisingly widespread involvement which was interpreted as tuberculosis by the roentgenologist. The following day the patient was seen by the author. Despite close scrutiny the physical examination disclosed no abnormality. The roentgenogram showed a diffuse fine mottling of the entire left lung and the lower half of the right. The mottling was accentuated in the third right and the second and fourth left anterior interspaces. Since the patient had no expectoration she was admitted to the University Hospital, where gastric washings were obtained and examined for tubercle bacilli and fungi. During her stay in the hospital the symptoms abated quickly and another roentgenogram was made on August 14, sixteen days after the first one. The lungs were found to be perfectly clear. The results of the laboratory examinations were negative and the patient was discharged as well. She remained so until September 18, when the cough and moderate dyspnea recurred. A physical examination proved negative. Another roentgenogram revealed a diffuse and somewhat coarser mottling than on the previous occasion. The disease affected the upper two-thirds of the right lung and the upper half of the left. The symptoms receded rapidly and the lungs were clear upon examination and fluoroscopy on October 2 and 16.

TABLE I

Laboratory and Roentgenographic Data

Date	X-ray	Hb.	W.B.C.	Eosinophils	Sed. Rate	Weight (lbs.)
7/29/42	***‡					113
8/14/42	00	76%	3750	3%	30†	
9/18/42	***					112
10/16/42					24	120
10/29/42	00	60%			22	120
12/26/42	******		11,600	37%	27	122
2/ 3/43	*****		10,500	39%	26	119
2/22/43			9450	20%		120
3/ 9/43	*	70%	7300	13%	21	122
3/22/43	00		6900	8%	20	
4/16/43		75%	7400	8%		
4/26/43	*****		8100	24%	24	
5/22/43	******		12,950	48%		113
6/ 8/43			14,850	34%		113
6/30/43	*****		12,800	35%	29	116
7/27/43		70%	7050	30%		113
8/26/43	*****		9140	31%		
9/15/43	*****		12,350	17%		111
10/ 5/43			10,100	24%	29	110
10/26/43	***		7350	18%	29	112
11/26/43			9200	22%		114
1/ 5/44	***	70%	10,150	24%	23	
2/ 9/44	******		18,000	74%	29	111
3/30/44	***	66%	6200	26%		109
4/ 5/44	***		9500	18%	25	
5/ 8/44	****		7850	20%		
6/ 9/44	*****		8300	29%	19	
7/14/44	***		7460	20%		
8/26/44	****		10,350	25%	24	116
9/26/44	***		9650	26%	22	117
10/24/44	**		8500	16%	20	118
11/27/44	***	72%	10,700	28%	25	
1/ 8/45	*****		12,100	43%	27	
2/ 6/45	*		11,150	12%	22	115
2/20/45	*		7100	14%	26	119

† Wintrobe method, remainder by Cutler method.

‡ Asterisks represent the approximate extent and density of the pulmonary lesions, ranging from no lesions (00) to the maximal lesions (******).

She continued in good health and no evidence of disease could be discerned by physical or fluoroscopic examinations made on October 30, November 13 and 27, and December 15.

On December 20 there was a sudden recurrence of the symptoms. These were more severe than on the two previous occasions and, in addition, the patient experienced con-

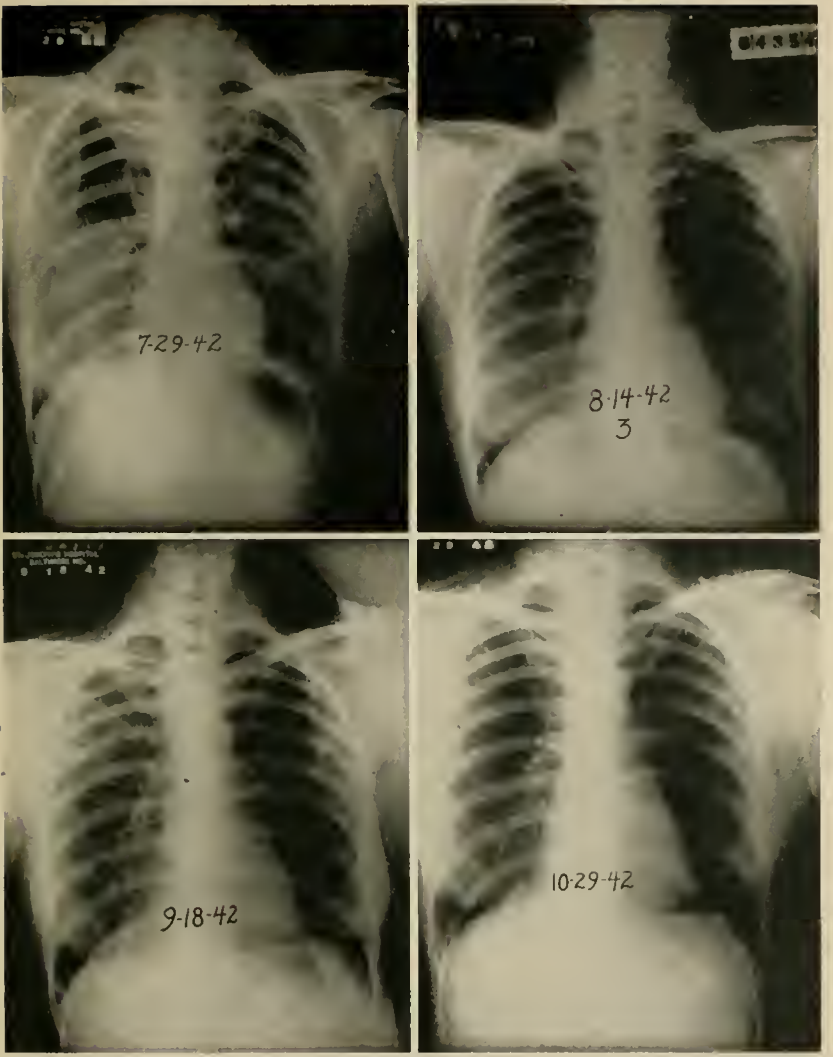

Fig. 1A (upper left). Approximate extent and density of lesions ***.
Fig. 1B (upper right). Approximate extent and density of lesions 00.
Fig. 1C (lower left). Approximate extent and density of lesions ***.
Fig. 1D (lower right). Approximate extent and density of lesions 00.

The numbers under the date on all illustrations represent the percentage of eosinophils at that time.

The approximate extent and density of the pulmonary lesions ranged from no lesions (00) to the maximal lesions (******).

siderable weakness, dizziness, and a feeling described as a "hunk of concrete" on her chest. Six days later an examination revealed a few medium râles at the base of the left lung and in the lower right axillary region. No other abnormality could be found. The roent-

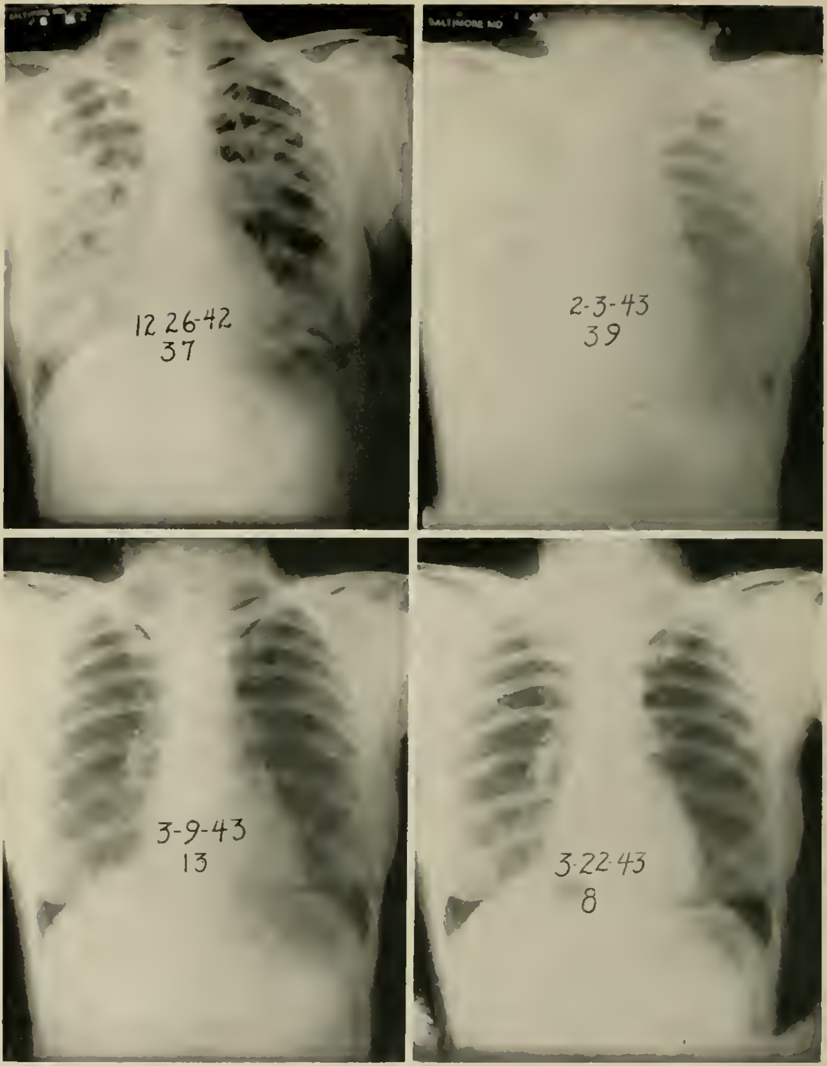

FIG. 2A (upper left). Approximate extent and density of lesions ******.
FIG. 2B (upper right). Approximate extent and density of lesions *****.
FIG. 2C (lower left). Approximate extent and density of lesions *.
FIG. 2D (lower right). Approximate extent and density of lesions 00.

genogram showed a massive involvement of both lungs in their entirety. The lesions had the appearance of atelectatic foci interspersed with areas of radiolucency. A hemogram disclosed 11,600 leukocytes, of which 37 per cent were eosinophils. The sedimentation rate by the Cutler method was 27 mm. in one hour. This attack was rather severe and forced the patient to remain in bed for about one week. The cough remained unproductive and her appetite diminished. She was then able to be up and take care of her

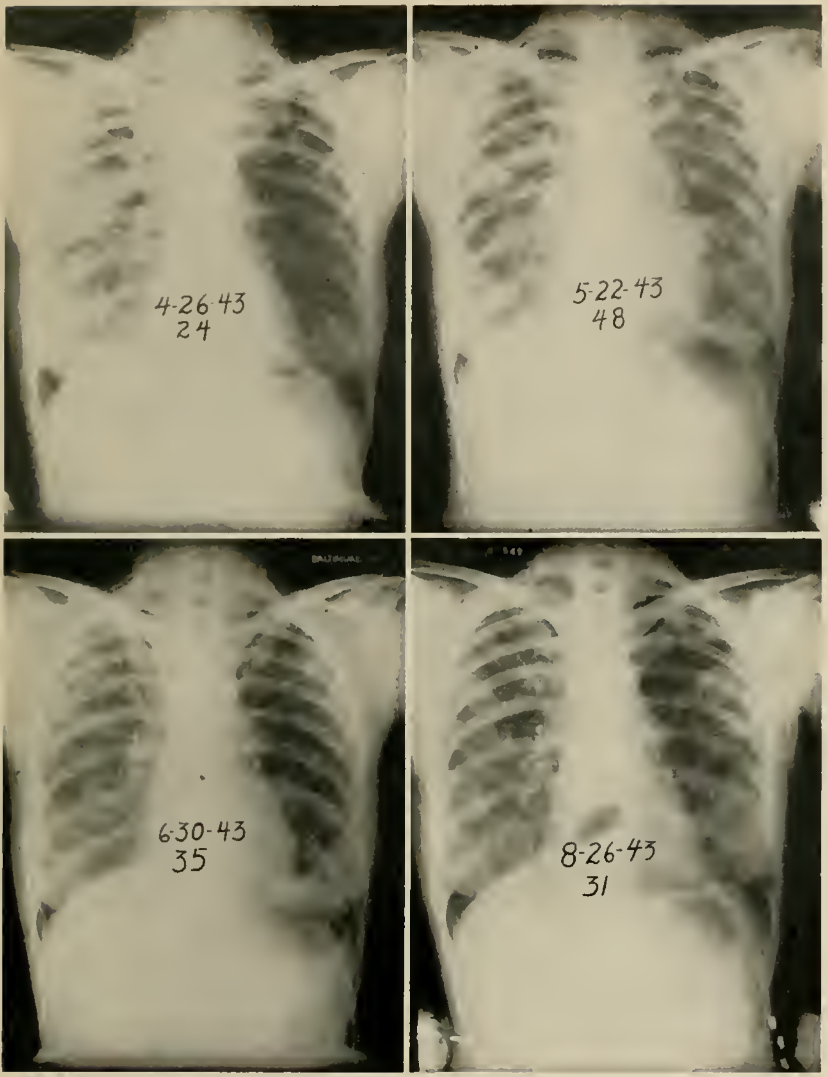

Fig. 3A (upper left). Approximate extent and density of lesions *****.
Fig. 3B (upper right). Approximate extent and density of lesions ******.
Fig. 3C (lower left). Approximate extent and density of lesions *****.
Fig. 3D (lower right). Approximate extent and density of lesions *****.

household duties on a slightly limited scale. From time to time she had a low grade fever which did not affect her. It disappeared in ten days but the cough persisted and occasionally she experienced transient dyspnea. Six specimens of stool were found to be negative for ova and parasites.

The patient continued to have mild symptoms and was seen on January 18 and February 3, 1943. On each occasion the physical signs were negligible, but fluoroscopic and roent-

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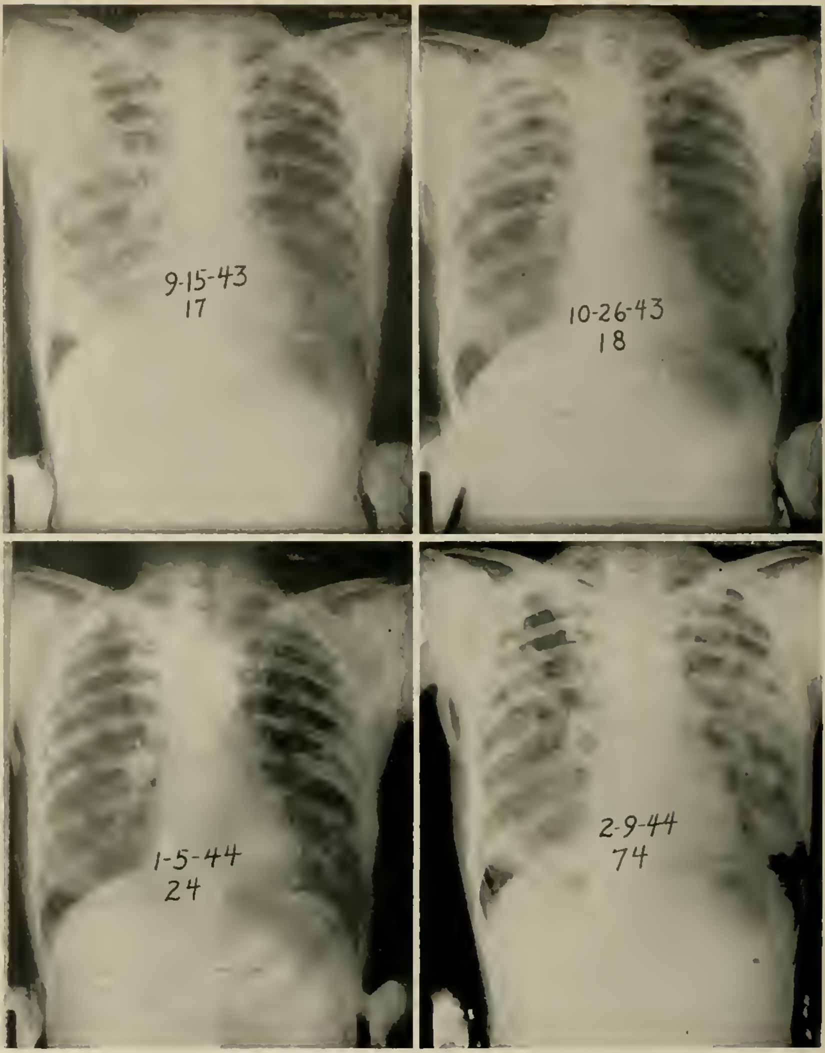
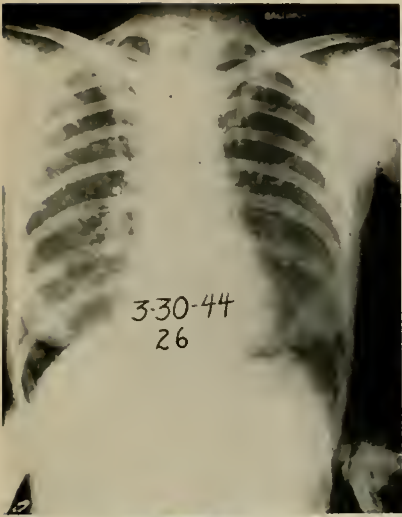
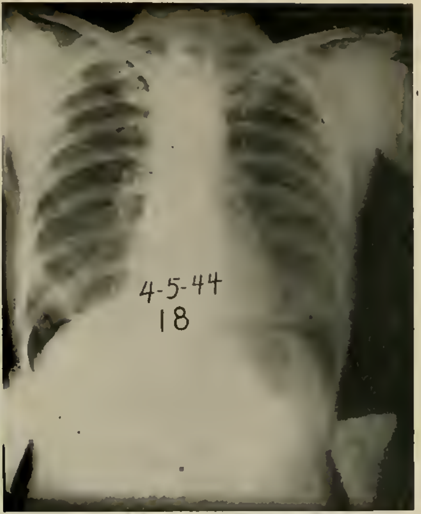


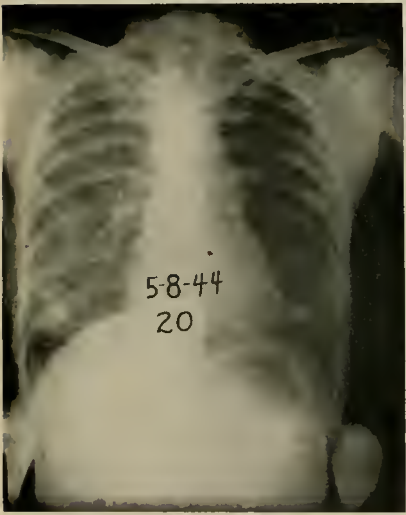
Fig. 4A (upper left). Approximate extent and density of lesions *****.
Fig. 4B (upper right). Approximate extent and density of lesions ***.
Fig. 4C (lower left). Approximate extent and density of lesions ***.
Fig. 4D (lower right). Approximate extent and density of lesions ******.

genographic examinations showed that the lesions still were present. The blood studies disclosed a continuation of the eosinophilia which amounted to 37 per cent. By March 9 considerable improvement was noted and on March 23 the lungs were found to be clear. The eosinophils had dropped to 8 per cent.

She was then referred to an allergist but he was unable to find an allergen to which she was sensitive. It was felt that she may have been sensitive to the insecticide pre-







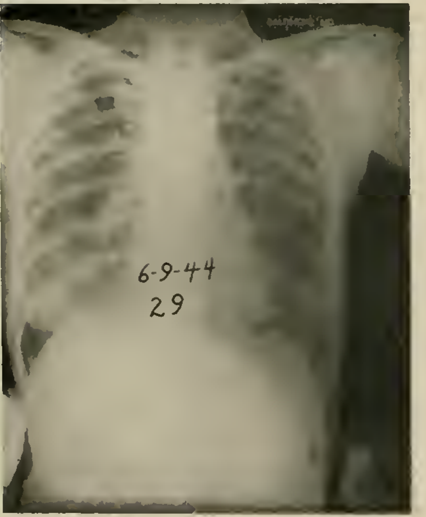


Fig. 5A (upper left). Approximate extent and density of lesions ***.
Fig. 5B (upper right). Approximate extent and density of lesions ***.
Fig. 5C (lower left). Approximate extent and density of lesions ****.
Fig. 5D (lower right). Approximate extent and density of lesions *****.

viously mentioned, therefore an aqueous solution of it was made. This caused disintegration of a pledget of cotton moistened with it so it could not be used as a skin test. The results of the tuberculin patch test were positive.

On April 24 the patient again became ill and a roentgenogram made two days later revealed a massive diffuse involvement of both lungs; the eosinophils rose to 24 per cent and one month later to 48 per cent. The physical signs were meager, as on previous occasions. She was seen at monthly intervals and essentially no change occurred until

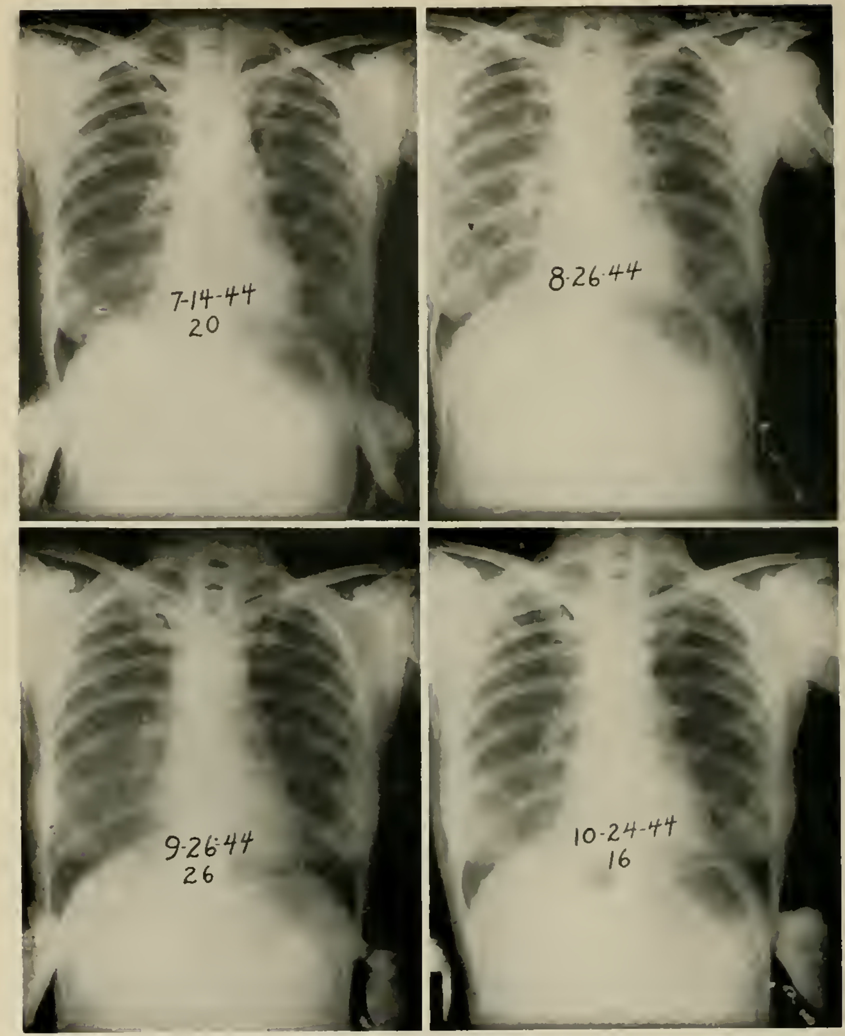
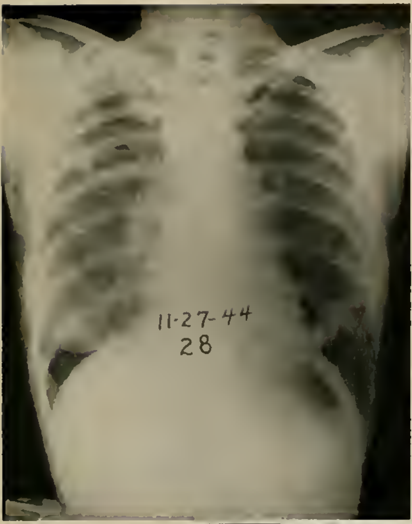
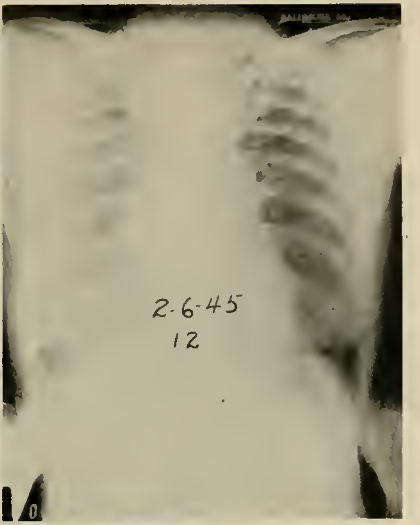


FIG. 6A (upper left). Approximate extent and density of lesions ***.
FIG. 6B (upper right). Approximate extent and density of lesions ****.
FIG. 6C (lower left). Approximate extent and density of lesions ***.
FIG. 6D (lower right). Approximate extent and density of lesions **.

September 15, when the pulmonary lesions diminished slightly and the eosinophils fell to 17 per cent. By October 26, 1943 the roentgenogram showed definite improvement and her condition remained about the same until February 9, 1944, when there was another extensive recurrence. At this time the hemogram revealed 18,000 leukocytes with 74 per cent eosinophils, the highest value reached in this case and one of the highest recorded in the literature. The process lessened gradually and remained at a moderate level, only to increase again by June 9. It receded to a low point by October 24 and again





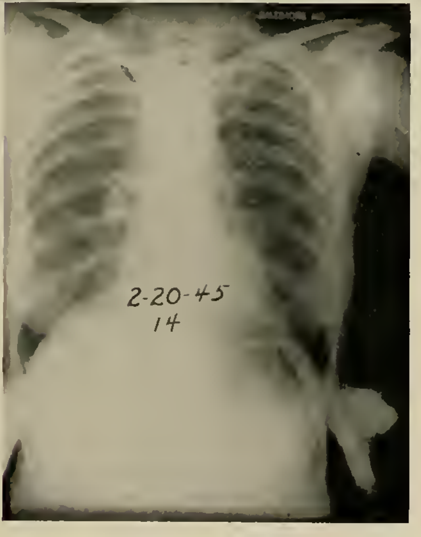


Fig. 7A (upper left). Approximate extent and density of lesions ***.
Fig. 7B (upper right). Approximate extent and density of lesions *.
Fig. 7C (lower center). Approximate extent and density of lesions *.

progressed to a high level by January 8, 1945. On February 6 and again on February 20, 1945 the patient felt well and the roentgenograms made on these dates revealed almost complete disappearance of the lesions. The hemograms showed a reduction in the eosinophils to 12 and 14 per cent respectively.

During the height of a severe attack the possibility of a strain on the right side of the heart was considered. An electrocardiogram was obtained but it revealed no abnormality. With regard to therapy, numerous medications including calcium, ephedrine, sedatives, and antitussive agents were employed and found to be of no value, except perhaps to alleviate the symptoms to a slight degree. On April 5, 1944 a roentgenogram was made and 0.5 cc. of epinephrine was injected subcutaneously with no clinical improvement. An additional roentgenogram obtained one hour later revealed no change when compared with the first film.

It was thought that the insecticide used at the time of her initial attack may have been a factor in the illness and that it had become impregnated in the house to such an extent that she was almost constantly exposed to it. She was, therefore, advised to move to another house, which she did in September, 1943 to no avail. In an attempt to rule out pulmonary oxyuriasis, dust was obtained from chandeliers in the patient's home and examined for ova of Oxyuris vermicularis; none were found. No evidence of familial eosinophila could be demonstrated.

During her illness the patient experienced several attacks of hives and on one occasion developed numerous scattered small painful nodules, which receded quickly. The latter part of her illness was complicated by a skin eruption involving the upper extremities, the legs, chest, back, and sides of the neck. She was seen by a dermatologist who described the lesions as "discrete papules which tended to be excoriated and form moderately well defined plaques with scales, slight crusting, and many excoriations." The diagnosis was nummular eczema, which is a vague term but considered an atopic disease. It responded to roentgen therapy.

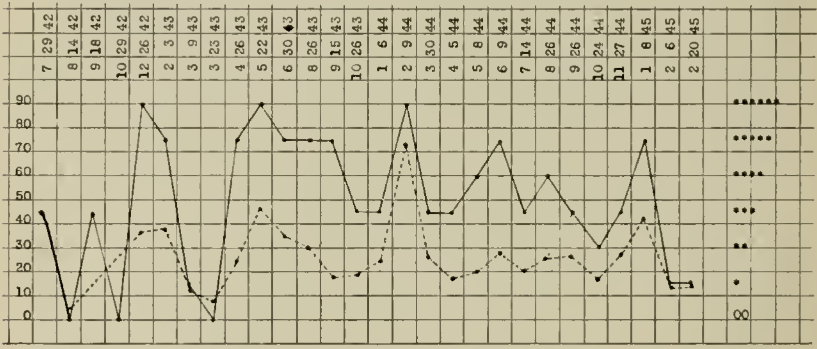


FIG. 8. The solid line represents the approximate extent and density of the pulmonary lesions, ranging from no lesion (CO), to the maximal lesions (******).

The broken line represents the percentage of eosinophils, which closely follows the actual number of eosinophils.

There is a fairly close but not strict parallelism between the eosinophilia and the pulmonary involvement.

COMMENT

The case herein reported was studied over a period of thirty-two months at monthly intervals. The patient experienced four distinct attacks during this time. The first lasted about five weeks; she was not under observation during the early part of this seizure. The symptoms began in the first week of July, 1942 and the first roentgenogram was made on July 29. Another one obtained on August 14 revealed a complete disappearance of the lesions. It is possible that she may have had several attacks during this period, but this is unlikely. The first hemogram in August did not show an eosinophilia. If an eosinophilia had been present it had disappeared with the disappearance of the pulmonary infiltration; however, there is a remote possibility that this was an instance without an associated eosinophilia. Such a possibility has been mentioned by Söderling (30). The second attack lasted about two weeks, as evidenced by roentgenographic and fluoroscopic examinations. Blood studies were not made at this time. Admittedly, the laboratory studies during the first two attacks were meager, but the course of the disease leaves no doubt as to the diagnosis. The third attack lasted about three months; the fourth, which is still in progress, has continued for twenty-three months. During the last two seizures the patient has been under close observation. Frequent blood studies have been made and the patient has had repeated fluoroscopic examinations in the interims between the almost monthly roentgenograms.

A study of the roentgenograms made in this case reveals that many individual shadows have persisted for considerably longer periods than a fortnight, therefore Löffler's dictum that the lesions of this process do not last longer than a fortnight certainly can be refuted. Kartagener's suggestion that three distinct types exist should probably be accepted as variations of the same entity rather than as separate ones, as he has implied. This conclusion is based upon the fact that the case reported here presents two attacks of short and two of long duration, so that one must accept them as part of the same process.

The etiologic factor in this case could not be determined; however, the occurrence of hives, eczema, and eosinophilia lends support to the generally accepted probability of hypersensitivity as the basic factor. In support of the possibility that intestinal helminths may be responsible for Löffler's syndrome, a number of investigators have offered as evidence the fact that in some cases the demonstration and removal of parasites were followed by disappearance of the pulmonary lesions. This fact cannot be accepted too readily because the majority of cases are of short duration, irrespective of treatment. It is true there have been instances of pulmonary infiltrations associated with intestinal helminthiasis. However, with regard to Löffler's syndrome the demonstration of ova and parasites has been too infrequent and inconstant to be considered too seriously. The etiologic factor probably can be definitely proved only in cases of long standing in which the removal of the offending agent produces prompt recovery, or when the same causative factor is found in most of the cases.

In the absence of a definite etiologic factor the matter of therapy is one of confusion and, as usual, various remedial measures have been recommended. Recently the use of mapharsen has been reported upon favorably; however, its efficacy is difficult to evaluate because it is likely that the patients treated would have improved without such therapy. In fact, the majority of patients do not need treatment.

The benignity of the process is emphasized by the long duration of extensive lesions in the case herein reported without producing serious effects. The fear of strain on the right side of the heart as a result of extensive pulmonary involvement can be dismissed in the absence of pre-existent organic heart disease.

The clinician should realize that although the disease readily lends itself to diagnosis, repeated study from a clinical, roentgenologic, and laboratory standpoint is necessary. All cases of pulmonary infiltration not clearly explained should be suspected as possible instances of the complex under discussion and studied accordingly.

In reviewing the literature one finds this disease reported under many different titles, such as "Löffler's Syndrome," "Transitory Pulmonary Infiltrations Accompanied by Eosinophilia," "Transitory Pulmonary Infiltrate with Simultaneous Eosinophilia in the Blood," and other similar captions. In many instances Löffler's syndrome is added in parenthesis, thus indicating that the authors do not accept completely the latter title but feel compelled to use it so that the title of their paper will not be misinterpreted. It is regrettable that there is no organization devoted exclusively to diseases of the chest comparable to the American Heart Association, which could be charged with the selection of an appropriate name for the condition. Löffler's syndrome is a short name which should be acceptable. However, it is not descriptive and includes a proper name, to which there is considerable objection. "Benign Pulmonary Infiltrate" is proposed as a short and rather descriptive title. This would allow for the inclusion of possible cases without eosinophilia, as well as those of longer duration than usual.

SUMMARY

Löffler's syndrome is a distinct entity characterized by transient and at times recurrent benign pulmonary infiltrations which usually last a fortnight or less; on rare occasions, however, they continue longer. There is generally an eosinophilia of varying degree.

The physical signs are usually meager and the symptoms are, as a rule, mild.

The roentgenographic appearance of the process is often not unlike that of tuberculosis, from which it must be differentiated.

The cause is unknown, although most investigators strongly suspect hypersensitivity.

There is no specific treatment and the patient need not be bedridden, unless compelled to do so by the severity of the symptoms. Mild sedatives and reassurance are helpful.

The diagnosis can be made only after careful consideration of repeated clinical, roentgenographic and laboratory observations. The disease presents a definite challenge to the roentgenologist, who is at a disadvantage unless he is aware of the clinical and laboratory data.

The name "Benign Pulmonary Infiltrate" is proposed.

A review of the literature is presented.

An unusual case observed over a period of thirty-two months is reported, the salient features of which were:

1. The occurrence of four separate attacks over a period of thirty-two months.
2. The first and second attacks were of short duration, similar to the majority reported in the literature. The third attack lasted about three months. The fourth has at the time of this writing continued for twenty-three months, a period longer than any to be found in the literature.
3. In spite of extensive pulmonary involvement there was relative freedom from severe symptoms.
4. The surprising paucity of physical signs.
5. The great variation in the percentage of eosinophils which on one occasion reached a value of 74 per cent, one of the highest on record.
6. The absence of seasonal variation.
7. The persistently high erythrocyte sedimentation rate.
8. The inability to find an etiologic factor.
9. The failure to influence the course of the illness, and its apparent benignity.
10. The predominance of involvement of the right lung.

ADDENDUM

Since this article was submitted for publication the patient has had a recrudescence of the pulmonary lesions with a recurrence of some of the symptoms. She has received 0.06 gm. of mapharsen twice a week for three weeks, without any benefit. It was necessary to discontinue the drug because of intolerance to it. She has again been tested by an allergist who was unable to find an allergen to which she is sensitive. Her fourth attack is now of twenty-six months' duration.

The author expresses his thanks to Dr. F. Kadan, through whose efforts the patient has submitted to close and continuous observation; to Dr. David Tenner, who made the electrocardiographic study; and to Dr. J. Loebl, who translated several of the original articles written in German.

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ESOPHAGEAL ANASTOMOSIS FOLLOWING RESECTION OF THE MIDDLE THIRD OF THE ESOPHAGUS FOR CARCINOMA*†

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An attempt to relieve the symptoms of carcinoma of the esophagus by circumvention was carried out by Bircher (8) in 1894 by the construction of an antethoracic skin tube esophagus. The first attempt failed because the patient died before the procedure was completed. As the work in this direction proceeded it became evident that an excessive amount of surgery was expended with no chance of recovery, since the growth was not removed.

In 1913 Torek (11) accomplished the first successful removal of a carcinoma of the thoracic esophagus. His operation resulted in a near cervical esophageal fistula and a gastrostomy. The survival of this patient revived the necessity for some type of antethoracic esophagus. The simplest means of uniting the esophageal fistula and the gastrostomy was by the use of an external rubber tube. Turner (13) reported on a patient who used a rubber tube esophagus for approximately sixteen years and completed a medical education in the interim. The union of an esophageal fistula and a gastrostomy by living tissue was accomplished by many workers through various methods, such as skin tubes, the jejunum, colon, stomach, and numerous combinations of these. These methods were well reviewed and described by Ochsner (8) and by Yudin (14). They have the disadvantage of all multiple stage operations. Often patients die from metastasis before the antethoracic esophagus is completed and accordingly the patient derives little benefit from the removal of the esophageal growth. In 1934 Ochsner completed the first antethoracic esophagoplasty in America in the case of a benign stricture of the esophagus.

In 1938 Adams and Phemister (1) reported a successful resection of the lower end of the esophagus with anastomosis of the esophagus to the stomach, thus removing the carcinoma and restoring the continuity of the gastrointestinal tract. In a discussion of this case, Overholt described a similar case and Kirschner reported a gastro-esophageal anastomosis after the removal of a benign lesion of the esophagus. Subsequently many successful cases have been recorded. This operative procedure seems to adequately care for carcinoma of the lower third of the esophagus.

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Since gastro-esophageal anastomosis was found successful for carcinoma of the lower third of the esophagus, it has become evident that establishment of the continuity of the intestinal tract after resection of the middle third of the esophagus is highly desirable. Experimental studies were made by Carter (4) and Kay (6). Tubes of the stomach were fashioned and brought into the thoracic cavity for anastomosis to the proximal end of the resected esophagus. This was a two stage procedure. Kay also studied the use of a loop of the jejunum for the same purpose.

In a successful resection of an extensive carcinoma of the lower third of the esophagus the anastomosis between the partially resected stomach and the proximal end of the resected esophagus was made at the level of the aortic arch (2). This case inspired the thought that in a carcinoma of the middle third of the esophagus or even of the lower part of the upper third of the esophagus the defect could be bridged by bringing the intact stomach into the thorax. Studies were made upon cadavers and it was obvious that if the left gastric artery and the gastrohepatic ligament were divided the stomach could be brought almost completely into the thorax. The blood supply that the stomach receives from the lienal artery must be preserved carefully. By necessity the spleen would be brought up into the thorax with the stomach or its removal would be necessary.

Gorlach (5) has reported a successful reestablishment of esophagogastric continuity following resection of the esophagus for carcinoma of the middle third. His method is somewhat different from the procedure developed upon cadavers and used on the case herein reported.

CASE REPORT

A. K., a white male, age 62, Baltimore City Hospitals No. 84,450, was admitted on October 21, 1943 and died on December 1, 1943. The patient said that he had been well until six weeks before admission, when he began to experience difficulty in swallowing. At the time of admission he could swallow only small amounts of liquids.

A physical examination revealed an emaciated patient who was in no distress. His blood pressure was 120 mm. of mercury systolic and 70 mm. diastolic. The findings of the examination were normal except for poor oral hygiene, bilateral varicosities of the greater saphenous vein, atrophy of the small muscles of the right hand resulting from an old laceration of the wrist, and deformity of the left tibia from an old fracture.

Laboratory studies showed normal findings for the urinalysis, phenolsulphonphthalein test, serologic test for syphilis, venous pressure, vital capacity, circulation time, liver function, and electrocardiogram. The hemoglobin determination was 80%. The white blood cell count was 6500. A roentgenogram disclosed a carcinoma of the middle third of the esophagus (Fig. 1).

On November 29, 1943 an operation was done under intratracheal gas, oxygen, and ether anesthesia. A posterolateral incision was made through the sixth interspace. Two ribs above and two ribs below were divided at the tip of their corresponding transverse processes. The esophagus was exposed and found to be involved by a carcinoma whose upper limit was at the level of the aortic arch. The diaphragm was opened. No metastases were seen either in the thorax or the abdomen. The phrenic nerve was crushed.

As suggested by Torek (12), the four pairs of upper intercostal arteries were ligated and divided, as was the left bronchial artery. This procedure allowed the aortic arch to be retracted considerably and permitted an easy access to the esophagus and its growth. In freeing the esophagus the right pleural cavity was entered through the mediastinum. The opening was packed with moist saline sponges. The esophagus was divided between clamps about one and one-half inches proximal to the cardia of the stomach and again above the arch of the aorta at a point about midway between the arch of the aorta and the superior aperture of the thorax. Thus a generous amount of esophagus on either side of the tumor was resected. A microscopic study revealed that the resection amply included the entire growth. The stomach was freed from the diaphragm and the left gastric artery was divided. The gastrohepatic ligament was divided as far as the pylorus, thus freeing the lesser curvature of the stomach and providing great mobility of the stomach. In order to guard the blood supply from the lienal artery to the stomach the spleen was brought into the thorax. This step advanced the pancreas and colon but both organs remained on the abdominal side of the diaphragm. The two ends of the esophagus could be approximated easily and both ends bled but not freely. It seemed impossible to anastomose the esophagus by the usual end-to-end suture methods. A Murphy button anastomosis was accomplished with ease. It was reinforced by interrupted mattress sutures of silk. The line of anastomosis was sutured loosely to surrounding tissue, thus helping to bring about sealing of the suture line. The stomach was anchored to the parietal pleura and the aortic arch in order that no tension could be exerted on the line of anastomosis. The diaphragm was closed loosely about the stomach. Sulfanilamide and sodium tetradecyl sulfate 1:500 in azochloramid 1:3300 were placed in the pleural cavity. The pleural cavity was drained by the use of a double tube (3) brought out through an intercostal stab wound in the lower part of the chest. The wound was closed by interrupted sutures, with drainage of the chest wall.

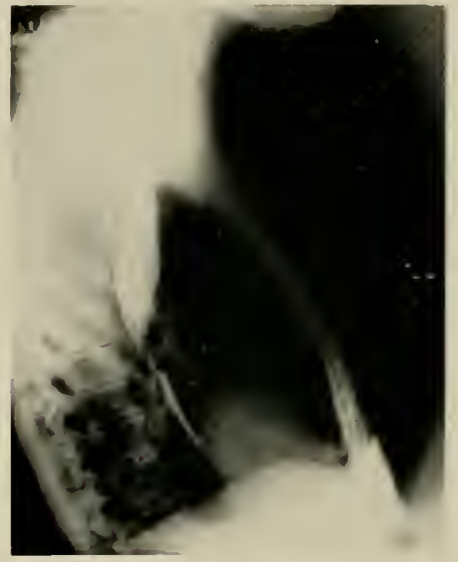
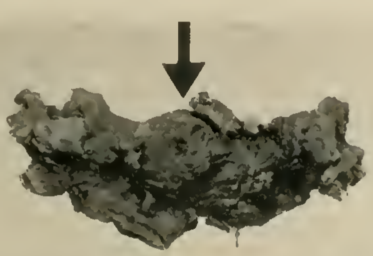


FIG. 1. Roentgenogram showing a barium examination that reveals a carcinoma of the middle third of the esophagus.

During the operation the patient received 1000 cc. of whole citrated blood and 1000 cc. of plasma intravenously. His condition was poor at the completion of the operation. The blood pressure was 88 mm. of mercury systolic and 60 mm. diastolic. The duration of the operation from the incision to closure of the wound was three hours and thirty minutes.

Upon his return to the ward the patient was placed in an oxygen tent. The intrapleural drainage tube was connected to negative suction as described elsewhere (3) and the patient's condition improved. His blood pressure rose to 125 mm. of mercury systolic and 80 mm. diastolic. After twenty-four hours the prospect of recovery was favorable.



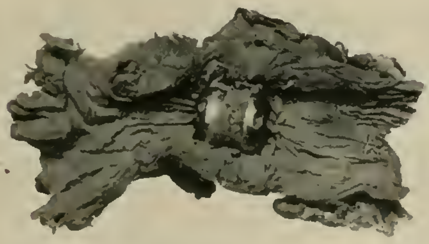


Fig. 2 (Top). A photograph of the autopsy specimen of the esophagus. The arrow indicates the line of anastomosis.

Fig. 3. (Bottom). Photograph of the specimen shown in Figure 2 after it was opened. End-to-end anastomosis of the esophagus with a Murphy button is well illustrated.

He was able to take water by mouth. At the end of forty-eight hours he began to fail rather rapidly and in spite of adequate therapy he died during the third postoperative day, apparently from bronchopneumonia and cardiac failure. The highest temperature observed postoperatively was 101 F. by mouth.

Autopsy findings revealed no gross infection of the pleural cavity or mediastinum. The site of anastomosis was well sealed and appeared entirely healthy (Fig. 2 and 3). Certainly enough time had elapsed to demonstrate fully that the blood supply was adequate. Microscopic sections through the anastomotic line revealed no infection, and thus with no infection and an adequate blood supply it seemed likely that healing would take place. The patient presumably died from cardiac failure.

DISCUSSION

In the experimental work on cadavers it appeared that mobilization of the aorta would permit bringing the esophagus to the left of the aortic arch, thus shortening the distance from the proximal end of the resected esophagus to the esophageal hiatus of the diaphragm. After removing the upper intercostal branches in the patient, the aorta could be mobilized but it would return to its original bed, undoubtedly because of the pressure within. No rational way could be found to attach it in a new position.

Mobilization of the aorta permitted easier access to the esophagus and its growth; however, it increased the magnitude of the operation beyond any conceivable benefit derived. The trauma associated with displacement of the aorta together with the increased operative work may have enhanced the terminal cardiac failure. It now seems unnecessary and impracticable to attempt mobilization of the aorta.

The contemplated method of placing the esophagus to the left of the aortic arch, as advocated by Gorlack, failed because the distance was thus increased and because the mobilized aorta could not be kept from its original bed.

Andrus (1) has pointed out that the esophagus will heal whether approximated to itself or to the stomach. The Murphy button was used successfully in an esophagogastrostomy by Miscall and Clark (7). The patient in this instance lived long enough to prove that the blood supply to the remaining ends of the esophagus was not jeopardized.

The cancerous growth extends long distances in the submucosa and muscularis of the esophagus, as pointed out by Sweet (10). In the case reported microscopic studies revealed an excision well beyond any demonstrable cancer cells, both proximally and distally. The Torek operative procedure is likely to fail if too little of the esophagus is removed in high growths; a considerable length of the esophagus is required to make an adequate cervical fistula. It seems that the method described here permits a more extensive resection of the esophagus.

Subsequent surgical procedure had led to an efficient method of dealing with an inadvertent opening into the right pleural cavity. A catheter is placed in the right pleural cavity through the mediastinal pleural opening and the region is packed with saline sponges. The catheter can then be connected to suction; thus, the right pleural cavity is kept free of fluid and air during the operative procedure. Upon closure of the thorax at completion of the operation the right pleural cavity, if inadvertently opened into, may be drained by bringing a catheter through the mediastinum and out through the left thoracic incision. Negative pressure suction can be used for twenty-four hours, when the catheter may be withdrawn. The left pleural cavity can be drained as indicated in the case reported.

A plea must be made for earlier diagnosis of the disease. It seems certain that the operative mortality would be reduced greatly if the patients could be operated upon before debility from malnutrition occurs. Furthermore, it is probable that the survival periods would be lengthened if earlier surgery could be accomplished. Any patient who has reached forty years of age and who has had no previous esophageal disease must be considered to have carcinoma of the esophagus if he has any symptoms referable to the esophagus, especially dysphagia. Careful esophageal studies by the radiologist and esophagoscopist will enable the physician to make the correct diagnosis.

If the patient with carcinoma of the esophagus has lost considerable weight, which is the usual condition late in the disease, the patient might be prepared for surgery by roentgen ray and radium treatment, as advocated by Patterson (9). There was an average survival period of fourteen and a half months in twenty cases actively treated by Patterson. He does not recommend surgery. His method appears to be well adapted to bringing the patient into a suitable surgical condition.

CONCLUSION

A plea is made for earlier diagnosis of carcinoma of the esophagus.

It is technically possible to mobilize the stomach and esophagus sufficiently to do an end-to-end esophageal anastomosis above the aorta in the superior mediastinum.

The patient reported upon lived long enough to indicate that the blood supply to the esophagus was not jeopardized.

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SOME MATERNAL DEATHS AND THE LESSONS THEY TEACH US*

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The large and frequently unnecessary loss of life from causes directly or indirectly associated with childbirth has been a matter of concern to the medical profession for many years. There are many explanations for the spectacular fall in the maternal mortality rate throughout the nation during the past decade, but it is probable that the intensive study and investigation of each individual death from these causes has done more than any other single thing to focus the attention of the medical profession on the preventable nature of one-half to two-thirds of all the deaths attributable to childbirth in this country.

There is no doubt that an increased percentage of hospital deliveries, improved hospital standards, better trained physicians, blood banks, the sulfa drugs, and a host of other factors have played their part in the tremendous saving of life made possible where such things are available. It is, however, the investigation and critical analysis of these deaths among mothers which has called the attention of all concerned to the deficiencies and neglect in any community sufficiently interested to participate in such a study.

In 1934 the maternal mortality rate in the United States was 5.9 per 1000 live births, as represented by the loss of 12,859 women from causes associated with childbirth. During this same year the resident maternal mortality rate in Baltimore was 5.8 per 1000 live births. The maternal mortality rate for the United States for 1942 was 2.6, as represented by the loss of 7267 mothers, and the rate for Baltimore for this same year was 1.7 per 1000 live births.

On February 15, 1935 the Baltimore City Medical Society unanimously adopted a resolution requesting the Baltimore City Health Department to undertake a study of the causes of maternal mortality in Baltimore with a view toward ascertaining the primary causes of death among mothers in association with childbirth. The Society pledged to support the Health Department's efforts in the development of its preventive work along these lines and urged its members to give their fullest cooperation in these undertakings. On December 27, 1935 the first meeting was held of a committee appointed to study maternal deaths, which was selected jointly by the President of the Medical Society and the Commissioner of Health. Meetings of this committee have been held regularly since that time, to which physicians practicing in Maryland have been invited. Every death occurring in Baltimore that is in any way associated with pregnancy is discussed anonymously without any reference to the name of the deceased, the physician or the hospital involved. All of the available factors concerning the prenatal care, the delivery, and postpartum care of the patient are studied in detail. This is followed by a general discussion of the efficiency of the care rendered, and finally the correctness of the cause of death as indicated on the certificate of death and the preventability of the death are determined. The meetings of this Joint Committee on Maternal Mortality are usually held on the fourth Thursday of every month at 4:00 P.M. in Osler Hall, unless otherwise noted in the bulletin of the Baltimore City Medical Society.

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* Presented at the meeting of the Baltimore City Medical Society, March 2, 1945.

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It is hoped that the brief review of several typical deaths of a preventable nature may serve to illustrate the value of such studies and at the same time demonstrate some of the more common causes of maternal mortality and the lessons these deaths teach us.

CASE REPORTS

Case No. 1: This patient was a twenty year old white multigravida who was admitted to the hospital at 12:05 A.M. She was under the care of a private physician during the prenatal period, but there was a complete absence of information on the hospital history with regard to her former pregnancies or the prenatal course during this pregnancy. The patient was at term and in active labor at the time of admission. She was given vitamin K and prepared in the routine manner. The membranes had ruptured prior to admission and the patient was having considerable bloody show with labor pains every two or three minutes. A rectal examination twenty-five minutes after admission revealed the cervix to be fully dilated. At this time the patient was moved to the delivery room and nitrous oxide and oxygen were given with the pains. She was draped and catheterized at 1:15 A.M. and the anesthetist was instructed to anesthetize for delivery. Nitrous oxide and oxygen were given for two or three minutes as a pre-ether induction. The oxygen content was then increased and the ether valve opened to the full position. The patient took this mixture for three to four minutes and her respirations became shallow and rapid. Her lips became cyanotic, she stopped breathing completely, and the facial and jaw muscles became spastic. Oxygen was given through a nasal catheter, and coramine and metrazol were administered intravenously. Artificial respiration was begun since the patient's respirations had ceased and in spite of adrenalin and other medication she died at 1:25 A.M. A stillborn fetus was delivered by outlet forceps at 1:28 A.M. No autopsy was performed on either the mother or the baby.

Discussion: This is obviously a death attributable to anesthesia despite the fact that the cause of death specified on the certificate submitted to the Health Department gave acute respiratory failure, cause undetermined, as the diagnosis. A careful investigation of this case revealed that the anesthetic was given by a first year intern with little training in anesthesia. The relegation of obstetric anesthesia in many hospitals to inexperienced and untrained personnel without supervision cannot be condemned too strongly.

The use of anesthesia and analgesia during labor and delivery has grown steadily in extent since its introduction in the last century and is a problem of the most pressing importance. The responsibility of the obstetrician is primarily to insure a living baby and mother. The alleviation or even the entire elimination of pain achieved at a cost to the mother or the infant must be avoided in spite of the insistent demands of a lay public in no position to estimate the part played by the increased use of anesthesia as a cause of many preventable deaths. The universal use of properly selected anesthetics of proved safety administered by adequately trained anesthetists could be the means for saving the lives of a considerable number of pregnant women annually in the United States.

Case No. 2: The patient was a twenty-nine year old white multigravida whose family and past histories were noncontributory. She had been married eleven years and all three of her previous pregnancies were normal, except for some slight ankle edema in the first and third pregnancies. These three pregnancies went to term, terminated spontaneously, and were followed by uneventful postpartum periods. The patient's last menstruation was on January 3 and the estimated date of confinement was October 10. She registered with her family physician during the third month of her pregnancy. He instructed her to return to him for observation monthly, but her visits to his office were most irregular and infrequent. At no time during the pregnancy did her physician mention the existence of an elevated blood pressure or any other abnormality. The husband first noticed that his wife complained of the presence of headaches and a dark urine during the latter part of August, about six or seven weeks prior to the estimated date of confinement. From this time on the headaches continued intermittently and there was ankle edema which the husband treated with massage. About the last week in September the family physician instructed the patient to take a dose of Epsom salts every morning and not to eat much food. She continued on this schedule until October 8, when she began to have much more severe headaches and slight pain in the back. Some abdominal pains began on the afternoon of October 8, but lasted only until about 10:00 P.M. The family physician was called by telephone and he instructed the patient to remain at home until her pains became stronger and more regular. For the next three days the patient had severe headaches but only mild contractions. On the fourth day, however, while in bed she had her first eclamptic convulsion at 7:45 A.M. The family physician was called but did not arrive until amost two hours later. During the interim she had four more convulsions. Upon his arrival he gave her a capsule containing three grams of sodium amytal which was to be followed by a second dose two hours later.

The patient was admitted to the hospital at 2:45 P.M., seven hours following her first convulsion. She was in a coma and her blood pressure was 210 mm. of mercury systolic and 108 mm. diastolic. Morphine, paraldehyde, 50 per cent magnesium sulfate, 25 per cent glucose, and digifolin were administered in the next two hours. Her condition was critical and during the night she developed Cheyne-Stokes respirations. Her pulse varied from 108 to 132 and the blood pressure remained at a high level. Treatment was continued for the first forty-eight hours following admission, when it was decided to perform an amniotomy and apply a Willett clamp to the fetal scalp. About nine hours later the patient delivered a full term living child weighing 7 pounds 10½ ounces. Her blood pressure at this time was 190 mm. of mercury systolic and 110 mm. diastolic, and the pulse rate had increased to 180 per minute. During the next few hours the pulse rate gradually was reduced to 136 per minute. The patient's temperature by rectum then was

104 F. A dose of 50,000 units of penicillin was given at 8:00 P.M. and 20,000 units ordered for administration every four hours. Her general condition gradually became worse and in spite of oxygen and cardiac stimulation respirations ceased on October 15, the fourth day following admission and the day following delivery.

Discussion: It is obvious that the type of prenatal care which this patient received was poor. Education of the expectant mother in the importance of not only putting herself under supervision early in pregnancy but also of cooperating with her physician throughout the prenatal period, and the assurance to every woman of the services of an adequately trained attendant will play a large part in the prevention of many unnecessary deaths from the toxemias of pregnancy. Deaths caused by toxemia are for the most part preventable; together with puerperal infection and hemorrhage, the toxemias are one of the three most frequent causes of death associated with childbearing. The preventability of the death just discussed obviously lies in the failure of the attending physician to detect the early signs of impending disaster and the absence of prompt and vigorous treatment. Once the eclamptic convulsions have been allowed to develop, the prognosis for both mother and fetus becomes grave and the task of the physician more difficult.

Case No. 3: This patient was a 32 year old white gravida II whose family and personal histories were uneventful except for her past obstetric history. Her first pregnancy was in 1933, when after being in labor for nine hours her membranes were ruptured artificially, and after seven more hours of labor she was delivered by classical cesarean section. On her third day in the hospital her temperature was elevated and remained at a high level for several days. After twenty-one days in the hospital she was discharged in relatively good condition after recovery from the infection.

The estimated date of confinement of her present pregnancy was August 4. When first seen she was approximately twelve weeks pregnant. A physical examination revealed no abnormalities, the pelvic measurements were normal, her weight was 140½ pounds, and the blood pressure was 150 mm. of mercury systolic and 100 mm. diastolic. In the course of the pregnancy she gained 18½ pounds. On the last prenatal visit her blood pressure was 130 mm. of mercury systolic and 80 mm. diastolic, she was about thirty-six weeks pregnant, the fetal head was not engaged, and the fetus was lying in a transverse position. In view of the previous cesarean section followed by a febrile puerperium it was decided that an elective cesarean section would be the procedure of choice to be performed within the following week or two.

On July 23, about two weeks from term, the patient was admitted to the hospital for delivery. At 9 A.M. the following morning a classical cesarean section was done under gas, oxygen, and ether anesthesia. The uterus was found to be remarkably free from adhesions and a living male child weighing 7 pounds, 13½ ounces was delivered. There was considerable bleeding from the uterine incision and, in view of the fact that the suction apparatus was out of order, the closure of the uterus was prolonged unnecessarily. It was estimated that the patient at this time lost about 1500 cc. of blood. The placenta was delivered intact after the injection of an ampul of ergotrate directly into the uterine wall. In addition, an ampul of pitocin was given intramuscularly. The placental site was on the posterior wall of the uterus. When the uterine wall finally was closed the profuse hemorrhage appeared to be under control. Tubal sterilization was then performed by the Pomeroy method.

In the process of closing the peritoneal cavity it was noted that several loops of small intestine were adherent to the parietal peritoneum at the upper end of the abdominal incision. In attempting to dissect a loop of the intestine free, a small tear was made into it which was closed with a silk purse-string suture; further attempts at freeing the adherent intestines were abandoned. The closure of the abdominal wall was completed, but at about this time the anesthetist informed the operator that the patient's pulse had become rather rapid and he recommended that the patient be given some glucose. The administration of blood plasma was suggested by the operator and vetoed by the anesthetist, who felt that the glucose would be sufficient. This was done about 10:30 A.M. and the patient was returned to her bed in fair condition. At 10:55 A.M. an ampul of coramine was given and another ampul five minutes later. At this time the patient's pulse rate was 160, her respirations were 32 per minute, and she was beginning to react from the anesthesia. At 11:15 A.M. the glucose was discontinued after she had received approximately 500 cc. At 11:30 A.M. 1/6 gr. of morphine was given. At 12:00 noon her condition seemed to be getting worse and she was apparently going into a state of shock. An attempt was made to give her some plasma and because of the collapse of her veins an open venesection was done on the right arm, but no usable veins were found. In the meantime the radial pulse was no longer obtainable and the respirations had become shallow and labored. An open venesection on the left arm was more successful and between noon and 3:00 P.M. the patient received 2300 cc. of glucose, 1000 cc. of plasma, and 1000 cc. of whole blood. The radial pulse was then felt at the rate of about 160 beats per minute and for a time she appeared to be somewhat improved. At about 4:30 P.M., however, she again seemed to be going downhill. Forty minutes later 500 cc. of plasma and more 5 per cent glucose were given. At about this time the patient's abdomen was considerably distended and a small amount of blood started to ooze from her abdominal dressings. There was also rather profuse bleeding from the vagina. The abdomen was tympanitic throughout and there was no dulness in the flanks on percussion. At 6:30 P.M. more ergotrate was given intravenously. The respirations at this time were 60 to the minute. At 7:00 P.M. the administration of oxygen, which previously had been given and discontinued, was resumed. At 8:30 P.M. the patient was given 500 cc. of plasma, at 8:45 P.M. another 500 cc. of plasma, and at 9:15 P.M. still another 500 cc. of plasma and an ampul of adrenal cortex extract. At 9:30 P.M. the patient was seen in consultation with a gynecologist who recommended that she be left alone and that all medication be discontinued. Because of her deep shock he advised no operative procedure. It was his impression at this time that the patient was having an intra-abdominal hemorrhage. At 9:45 P.M. an additional 500 cc. of plasma was given. The patient's condition grew worse and at 1:30 A.M. she died.

Discussion: There is little doubt that this patient's death was attributable to the absence of prompt and adequate treatment for her blood loss. In addition, she obviously was the victim of an excessive quantity of intravenous fluids. The earlier administration of some whole blood rather than the glucose and plasma which she received might have been advantageous. The failure to employ all known procedures to control and combat hemorrhage and laxity in replacing the blood loss by prompt transfusion are probably two of the more outstanding causes of deaths from hemorrhage. Although it is not claimed that the correction of any one particular defect would serve to decrease the number of deaths resulting from this particular cause, it is generally agreed that for the most part deaths caused by hemorrhage are preventable when adequate diagnostic and therapeutic procedures are available and employed.

The foregoing cases should serve to demonstrate the preventable nature of many deaths. Not all fatalities can be avoided, but just as the reduction of morbidity and mortality in many branches of medical practice lies in the field of preventive medicine, so too is this true in obstetric practice. In determining the preventability of a particular death, many serious questions arise. Was there adequate prenatal care? Did this care include a thorough physical examination with a careful search for pulmonary, cardiac, and renal disease? Was the pelvis correctly measured and evaluated?

Many other questions of like importance should be considered. If complications of pregnancy or labor arose, were they recognized promptly and treated properly? Was the hospital adequately equipped and was everything available to safeguard the life of both mother and baby? Was the attendant sufficiently trained in the art of obstetrics to assure the patient of a correct diagnosis, of freedom from unnecessary interference and ill advised anesthesia and operative procedures? Was blood available when needed? Was the postpartum care adequate?

From this barrage of questions it readily can be seen that the responsibility for a preventable death may be placed at the door of the patient herself, the attendant or the hospital. The high percentage of preventable deaths in this field points to the necessity for intensive education of both the lay public and the medical profession. The responsibility of properly informing the lay public of the content and availability of adequate maternity care is the dual charge of both the medical profession and the Health Department. Medical schools and hospitals must provide adequate facilities for post-graduate training in obstetrics so that properly trained specialists are readily available for consultation and operative deliveries. Hospitals should have as directors of their staffs qualified obstetricians who will take sufficient interest in the operation of the maternity service to assure proper function and safety for every mother under its care. Attention to asepsis, isolation quarters, trained anesthetists, blood banks, qualified nursing personnel, and adequate supervision and consultation on every private as well as service case presenting abnormal features are all matters which cannot be overemphasized.

SUMMARY

One can probably best summarize all that has been said by repeating that the hazards of childbirth are greater than they should be. Responsibility for improving the situation rests with the medical profession.

With your permission, I should like to conclude my remarks by quoting from an essay written in 1843 by Oliver Wendell Holmes on the "Contagiousness of Puerperal Fever:"

"The woman about to become a mother, or with her new-born infant upon her bosom, should be the object of trembling care and sympathy wherever she bears her tender burden, or stretches her aching limbs. The very outcast of the streets has pity upon her sister in degradation when the seal of promised maternity is impressed upon her. The remorseless vengeance of the law, brought down upon its victim by a machinery as sure as destiny, is arrested in its fall at a word which reveals her transient claim for mercy. The solemn prayer of the liturgy singles out her sorrows from the multiplied trials of life, to plead for her in the hour of peril. God forbid that any member of the profession to which she trusts her life, doubly precious at that eventful period, should hazard it negligently, unadvisedly, or selfishly!"

ETHYLENE DISULFONATE IN BRONCHIAL ASTHMA*†

A Preliminary Report

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BALTIMORE, MD.

In any chronic disabling disease such as bronchial asthma, innumerable remedies are offered from time to time either for symptomatic relief or as a cure-all for all types of cases. Because of the distressing nature of bronchial asthma these patients are eager purchasers who will spend surprisingly large sums for unknown remedies after only the most cursory investigation. Needless to say, this creates a fertile field for exploitation by the dishonest vendor of worthless products as well as the producer of reputable and valuable pharmaceuticals. In view of this well recognized and understandable weakness on the part of asthma sufferers, it is necessary to evaluate the new remedies, not only to find the good but to expose the bad, thus helping in a small way to protect the gullible and suffering patients.

Evans, Bodman, and Maisin (5) in 1940 offered an ingenious theoretical explanation of the basic process of allergy. In their opinion, "Shock, whether traumatic, infective or emotional, interferes with the normal action of certain dehydrogenetic catalysts, thus preventing the normal degradation of carbohydrates by means of which oxygen is freed and energy released." Their contention was that the shock in question inactivated one of the series of co-enzymes normally present and if this could be supplied in minute amounts it would re-establish the process. Further quantities would then be produced spontaneously by the body and normalcy achieved with the relief of symptoms.

After tracing the steps known and thought to be involved in the degradation of carbohydrates they wrote: "We felt that a further stage of dehydrogenase action might take place in living tissue, by the interaction of an enzyme on acetaldehyde with momentary formation of ketene.

"This ketene, being the final breakdown product of carbohydrate, oxygen would enter the molecule, leading to the formation of carbon dioxide and water.

"We thought that such a substance might be the body's first line of defense against allergy, and that its absence, either due to inherited faulty metabolism ('inherited allergy'), or due to inhibitions by bacterial toxins in a subject whose metabolism was already imperfect, would result in the

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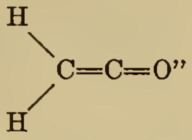
* From the Allergy Clinic, Department of Medicine, School of Medicine, University of Maryland.

† Received for publication May 4, 1945.

appearance of allergic symptoms, and thus the type of allergic disease would be a function of the type of cells whose metabolism was thus affected. In this way, it would appear that sepsis would be a precursor of allergy which, in our experience, is almost invariably true. The structural formula of such a ketene would be:



They then quoted Kendall (8) to the effect that formaldehyde would block the effect of histamine upon a muscle strip preparation probably by blocking the amino group, and Goldie and Sandor (7) as achieving the same effect with ketene. The latter workers rendered antidiphtheritic serum anaphylactically inactive while allowing it to retain its antitoxic power.

A search was made for a substance "which might replace this part of the dehydrogenase co-enzyme system which we have postulated to be absent or paralyzed by septic shock." For various reasons they thought that this would be a short carbon chain compound with two unsaturated carbon linkages. Further, they reported that "The probable nature of these substances is typically that of ethylene disulfonate, which may exist in conjunction with other compounds." A discussion of this basic theory is presented by Bartlett (3).

These authors then carried out a number of experiments with animals, as did Smith (10), which would seem to indicate that ethylene disulfonate could protect guinea pigs from anaphylactic shock upon the introduction of a shock dose fatal to the majority of control pigs.

Fisk, Small, and Foord (6) endeavored to duplicate the results of the foregoing workers without success. Furthermore, they discussed the work of the previous men critically, and showed that statistically their findings in favor of ethylene disulfonate, Allergosil, were within the limits of standard error and said "The odds are in favor that the difference between Allergosil treated and control animals is due to chance."

Their conclusion was that "Under the conditions of the foregoing experiments, ethylene disulfonate (Allergosil) did not produce a significant degree of protection against anaphylactic shock."

CLINICAL REPORTS

This material has been tried clinically by the originators of the theory and by many other workers, all of whom report a surprisingly high percentage of successful results. In their original article Evans et al. (5) administered ethylene disulfonate to seventy-one patients and obtained complete cures in nineteen or 26 per cent; partial control of the symptoms was seen in forty-eight or 67 per cent; there was no improvement in four patients or 5 per cent. They gave no information as to the types of cases treated, the severity, the duration, and other details. They did report briefly upon four of the patients who suffered from asthma of a severe type, all of whom were relieved completely. One point of particular interest was that one of their patients whose skin test proved positive to egg and who reacted to egg ingestion by the appearance of asthma was able to eat egg with impunity following treatment. They failed to mention whether the results of the skin test had been affected.

In November, 1942 Smith (9) reported upon a group of thirty-three allergic patients including twenty-five suffering from asthma, six with asthma who exhibited urticaria and eczema, one case of migraine, and one instance of "skin manifestation." Of these thirty-three patients 82 per cent were "successes," 8 per cent were greatly relieved, and 10 per cent were failures. Several successful cases were reported in detail and it is interesting to note that one, an asthmatic patient, had his first symptoms at the age of seventy-three years.

Bartlett (1) reported the following results in a group of allergic patients:

	No. of cases	*Completely relieved*	*Partially relieved*	*Satisfactory results*
Asthma	111	51%	35%	86%
Hay fever	76	51%	28%	79%
Eczema	42	79%	21%	100%
Urticaria	13	61%	31%	92%
Migraine	5	80%	20%	100%

In August, 1944 Bartlett (2) reported upon 528 adult patients treated with a slightly less favorable percentage of satisfactory results, namely: asthma—285 cases—81 per cent; hay fever and allergic rhinitis—158 cases—79 per cent; migraine—48 cases—95 per cent; eczema—37 cases—92 per cent. It will be noticed, however, that this is a most excellent therapeutic record.

Several other articles by the same workers and one by Wasson, quoted by Smith (11), seemed to confirm the high degree of efficacy of this material. Because of the publicity given it by the lay press (4) an attempt to evaluate the results of these men appeared desirable. The manufacturers kindly furnished an unlimited supply of the material and its administration in the Allergy Clinic was started.*

METHOD OF ADMINISTRATION

The procedure suggested by the originators was followed exactly with one exception, namely, the omission of large quantities of salt water in the early morning, during the week of preparation preceding the injection of ethylene disulfonate. The purpose of this was to "detoxify" the patient and thus eliminate possible deterrents to its action. It seemed futile to the workers in the Allergy Clinic and, after three patients complained rather vigorously, its use was discontinued. Actually it was later found that the results in these three were not better than those in subsequent patients treated without this preliminary step.

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* This material was supplied through the courtesy of the Spicer-Gerhard Company, Pasadena, California.

During the week preceding the injection of the material under discussion the patient received 200 mg. of vitamin C and one standard capsule of vitamin B complex per day. Sedatives, narcotic drugs, and the sulfonamides were withheld throughout treatment. For one week after the injection of ethylene disulfonate the administration of vitamin C was continued. Adrenalin and specific extracts were continued as indicated.

Results: Twelve cases of asthma were treated, including three of the extrinsic type caused by specific agents; in two cases of the intrinsic type the agents were not determined but they probably were bacterial; there were seven cases of a combined type showing evidence of both specific and bacterial causation.

The average duration of the condition was 15.58 years, the shortest being two years and the longest thirty years. The period of observation during the ethylene disulfonate therapy averaged seventeen weeks, with the minimum fourteen and the maximum twenty-two weeks.

The therapeutic results were classified as: failures, slightly improved, moderately improved, definitely improved, and cured. Five or 41 plus per cent were failures; three or 25 per cent were slightly improved; two or 16.5 per cent were definitely improved; there were no cures.

COMMENT

The results here were considered to be so completely unsatisfactory and so at variance with the glowing claims of previous workers as to warrant a preliminary report upon this small number of patients. The authors will continue to administer the material, if available, to asthmatic patients and also to those affected by allergies of other types until a statistically significant number have been treated.

CONCLUSION

The results reported by other observers would indicate that ethylene disulfonate is a highly efficacious agent giving results that are comparable from a percentage standpoint to the results achieved with an agent such as penicillin. Even with the small number of cases in which the material was administered, if these claims were warranted the results should be readily demonstrable. It is felt here that the claims made for this drug are completely excessive. The results obtained so far in the Allergy Clinic would seem to indicate that it has little if any therapeutic value.

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AN OBSTETRIC CASE HISTORY*†

CASE REPORT

The patient, a twenty-five year old primigravida, was admitted to the hospital in the thirty-sixth week of her pregnancy because of the rupture of the membranes. Her past and family histories were noncontributory and the pregnancy had been uneventful until just before admission, when her membranes had ruptured. When first seen she was in labor, the pains being at five minute intervals and of moderate severity. Abdominal palpation revealed a fetus weighing about 4 pounds, thirty-five to thirty-six weeks' gestation, a presentation breech, left sacro-anterior position, and the fetal heart in the left, with a rate of 160. No fetal abnormalities were noted. Pelvic measurements were ample. The mother's condition was entirely satisfactory. When the patient was prepared for rectal examination it was seen that the umbilical cord had prolapsed and a loop about four inches long was protruding from the vagina. The cord was pulsating normally, at the rate of 160 per minute, and the rectal examination was abandoned in favor of a sterile vaginal one. Preparations for this consumed approximately fifteen minutes and by this time the pulsations of the cord had decreased to about 80 per minute. Upon examination it was found that a frank breech presentation was about 1 cm. above the spines, the cervix was obliterated almost completely, and the external os dilated 4 cm. and rather thick.

Treatment: How should this case be conducted from this point?

DISCUSSION

A prolapse of the cord is of the greatest danger to the baby, and unless care is taken it may be the indirect cause of considerable damage, possibly fatal, to the mother. Attempts at replacement are so universally unsuccessful and carry such a risk of infection that they are hardly practical. Postural treatment to prevent compression of the cord by the descent of the presenting part is doomed to failure as labor progresses and has a decidedly limited field of application. It may be of temporary use when immediate delivery can be carried out safely and it is only necessary to maintain the position until preparations for this delivery are completed. Protection of the cord by threading it through a noncompressible tube of suitable diameter and shape has been suggested, but in practice this has been rather unsuccessful. Therefore, if the life of the infant is to be saved the only method of treatment with any great chance of success is immediate delivery. When the cervix is fully dilated or easily dilatable this usually can be accomplished without undue risk to the mother by breech extraction, forceps, or, somewhat less safely, by internal podalic version and breech extraction. Should the cervix be dilated only slightly and with no great pressure yet on the cord, abdominal delivery might be considered and the chances carefully weighed pro and con.

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* From the Department of Obstetrics, School of Medicine, University of Maryland.

† Received for publication May 28, 1945.

The operative risk is definitely increased by the rupture of the membranes and the prolapse of the cord, but is not too great under ideal conditions. In the case under consideration neither of the above sets of circumstances were present. The cervix was not sufficiently dilated to permit of delivery through the vagina without the danger of tearing it, possibly seriously, and the decided decrease in the pulsations of the cord indicated partial fetal asphyxia, so that the prospects of a living child were too poor to warrant cesarean section. Therefore, unpleasant as it was to contemplate, the only recourse left was to accept as inevitable the death of the baby and to deliver the mother with the minimum amount of trauma. She was relatively young and should have more babies later.

Actual treatment: Labor was allowed to continue. One-half hour later the cord pulsations ceased and two hours later a stillborn baby was delivered without difficulty by breech extraction. The recovery of the mother was uneventful.

MONTHLY MEETINGS OF THE UNIVERSITY HOSPITAL STAFF

At the monthly meeting of the University Hospital staff held on April 19, 1945 the following program was presented:

"Functional Ovarian Tumors," by Thomas L. Wilson, M.D., Department of Gynecology.

"Dysmenorrhea," by W. K. Diehl, B.S., M.D., Department of Gynecology.

Abstracts of these papers follow.

FUNCTIONAL OVARIAN TUMORS*

Thomas L. Wilson, M.D.

The arrhenoblastoma, theca cell tumor, granulosa cell tumor, and struma ovarii were discussed. Emphasis was placed on the changes in the sex characteristics of the individual as seen in the first three tumors mentioned and several instances of their presence were reported. A case of struma ovarii was presented showing the toxic symptoms which may be produced by the aberrant thyroid tissue.

DYSMENORRHEA†

W. K. Diehl, B.S., M.D.

Dysmenorrhea, a common cause of incapacitation, has been divided into primary and secondary types. The secondary group usually responds well to correction of underlying pathology. The primary type is difficult to treat since the cause is unknown. Many theories and remedies have been advanced, and work is being done to correlate the relation between the pelvic organs and ovarian hormones.

"Congenital Glaucoma" was the subject of the paper presented by F. Edwin Knowles, Jr., M.D., Department of Ophthalmology, at the monthly meeting of the University Hospital staff held on May 17, 1945.

An abstract follows.

CONGENITAL GLAUCOMA‡

F. Edwin Knowles, Jr., M.D.

Congenital glaucoma is a condition of the eye under the influence of increased intraocular pressure. It is caused by a developmental defect in the anterior chamber angle and is manifest chiefly in males during the first years of life. Its association with other ocular and nonocular developmental anomalies is particularly interesting.

Treatment with miotics is usually ineffectual and surgical intervention is the procedure of choice.

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* From the Department of Gynecology, School of Medicine, University of Maryland.

† From the Department of Gynecology, School of Medicine, University of Maryland.

‡ From the Department of Ophthalmology, School of Medicine, University of Maryland.

PROCEEDINGS
of the
University of Maryland Biological Society

Officers of the Society

Emil G. Schmidt, *President*
School of Medicine
Baltimore, Md.

F. Gaynor Evans, *Treasurer*
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Ronald Bamford, *Secretarial Representative*
Department of Botany
College Park, Md.

Councilors

Thomas C. Grubb
Robert H. Oster
William E. Hahn
Walter L. Hard

ONE HUNDRED AND FORTY-SECOND PROGRAM MEETING

The One Hundred and Forty-Second Program Meeting was held on March 14, 1945 at 4:00 P.M. in the Bressler Lecture Hall.

The program consisted of a paper on "The Destruction of Riboflavin in the Process of Irradiation, Evaporation, and Canning of Milk," by Frank H. J. Figge, Ph.D., Department of Gross Anatomy, School of Medicine, University of Maryland.

An abstract of this paper follows.

FLUORESCENT STUDIES ON THE VITAMIN CONTENT OF EVAPORATED CANNED MILK*

FRANK H. J. FIGGE, PH.D.†

Fresh pasteurized milk fluoresces a brilliant greenish yellow when examined in near-ultraviolet light, Wood's light. Evaporated milk, on the contrary, fluoresces a pale blue white. Since the intensity of the greenish yellow fluorescence in fresh milk is related to the concentration of riboflavin, it appeared from this observation that all of the riboflavin had been destroyed in evaporated milk. The investigation of this possibility revealed a destruction of 45 to 50 per cent of the riboflavin originally present in the milk. About 20 per cent of the riboflavin was destroyed by the process of irradiation to increase the vitamin D content. Another 25 per cent was destroyed by high temperature sterilization of the canned milk. The fluorescence of the riboflavin which remains, 50 to 55 per cent, is masked by the presence of the decomposition product, lumiflavin, which is blue-green fluorescent. The blue-white fluorescence of evaporated milk is therefore related to the complimentary fluorescence spectra of riboflavin and lumiflavin.

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* This work was aided by grants from the Bressler Alumni Research Fund, The Anna Fuller Fund, and the International Cancer Research Foundation.

† From the Department of Gross Anatomy, School of Medicine, University of Maryland.

It was thus established that the riboflavin was not destroyed completely by the irradiation and canning of milk as suspected from the preliminary fluorescence examinations. A high percentage is, however, destroyed and it was estimated that well over 2,000,000 grams of riboflavin are destroyed by canning milk in this country each year. These results were obtained about two years ago but have not been published for reasons that were discussed during the presentation of this paper.

Some of these results have been substantiated recently by several of the leading milk companies who announced that the irradiation of milk to increase the vitamin D content had been discontinued because of the destructive influence of this process on vitamin A and riboflavin. This will undoubtedly result in an improved product but the destruction of riboflavin by heat sterilization, which is almost as important, still remains. The statement that riboflavin possesses a relatively high degree of thermostability probably deserves further investigation.

ONE HUNDRED AND FORTY-THIRD PROGRAM MEETING

The One Hundred and Forty-Third Program Meeting was held on April 25, 1945 at 4:00 P.M. in the Bressler Lecture Hall.

Dr. M. C. Dodd of the Norwich Pharmacal Company, Norwich, N. Y., presented a paper entitled "Antibacterial Action of Furan Compounds."

As visiting bacteriologist in the Department of Pharmacology of the School of Medicine, University of Maryland, Dr. Dodd is studying bacteriologically the fate and distribution of 5-nitro 2-furaldehyde semicarbazone in patients undergoing treatment with this compound in the University Hospital.

ONE HUNDRED AND FORTY-FOURTH PROGRAM MEETING

The One Hundred and Forty-Fourth Program Meeting was held on May 23, 1945 at 4:00 P.M. in the Bressler Lecture Hall.

A paper on "Resistance to Low Oxygen Tension in Relation to Blood Sugar Levels in the Cat," was presented by Dietrich C. Smith, Ph.D. and Robert H. Oster, Ph.D., Department of Physiology, School of Medicine, University of Maryland.

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The names listed above are officers for the term beginning July 1, 1943 and ending July 30, 1945

COMMENCEMENT EXERCISES

JUNE 22, 1945

The Lyric—Baltimore

ORDER OF EXERCISES

I. The Procession: *The Coronation March*, Myerbeer; *Pomp and Circumstance*, Elgar.

II. Invocation: Rt. Rev. Noble C. Powell, D.D., *Bishop of Maryland.*

III. Greetings: Robert U. Patterson, M.D., C.M., LL.D., *Dean, School of Medicine;* H. C. Byrd, B.S., LL.D., D.Sc., *President, University of Maryland;* Hon. Herbert R. O'Conor, A.B., LL.B., LL.D., *Governor of Maryland.*

IV. The Address: W. J. C. Agnew, Rear Admiral (MC), U. S. N., *Assistant Chief, Bureau of Medicine and Surgery.*

V. Conferring of Degrees: President H. C. Byrd.

Presentation of Commissions in the Medical Corps, U.S.N.R.: Capt. E. M. Williams, U.S.N. (Ret.), Commanding Officer of the V-12 Unit.

Presentation of Commissions in the Medical Corps, A.U.S.: Lieut. Col. John C. Peth, Commandant, 3316th Service Unit, U.S.A.

Presentation of Graduates: Dr. Glenn S. Weiland, Assistant Professor of Biological Chemistry.

Graduates	*Internships*
Benjamin Amsterdam	Metropolitan Hospital, New York City
George Hagan Anderson	University Hospital, Baltimore, Md.
Gayle Gardner Arnold	Union Memorial Hospital, Baltimore, Md.
Frank Joseph Ayd, Jr.	St. Joseph's Hospital, Baltimore, Md.
Joseph Woodrow Baggett	University Hospital, Baltimore, Md.
Claude Fletcher Bailey	Mercy Hospital, Baltimore, Md.
David Hargis Barker	Gallinger Municipal Hospital, Washington, D. C.
Thomas Gordon Barnes, II	University Hospital, Baltimore, Md.
Philip Charles Baroody	St. Vincent's Hospital, Bridgeport, Conn.
David Fowler Bell, Jr.	Mercy Hospital, Baltimore, Md.
Benjamin Berdiansky	West Baltimore General Hospital, Baltimore, Md.
Joseph Harrison Brannen	Hillman Hospital, Birmingham, Ala.
William Kendig Brendle	Mercy Hospital, Baltimore, Md.
Charles Leavitt Butler	University Hospital, Baltimore, Md.
Robert Francis Byrne	Garfield Memorial Hospital, Washington, D. C.
George Russell Callender, Jr.	University Hospital, Baltimore, Md.
Oscar Wilde Camponeschi	Church Home and Hospital, Baltimore, Md.
Nathan Canter	Newark City Hospital, Newark, N. J.
Mary Dorcas Clark	University Hospital, Baltimore, Md.
Eugene Hayward Conner	University Hospital, Baltimore, Md.
Sallie Cook	University Hospital, Baltimore, Md.
John Bernard Davis	Charleston General Hospital, Charleston, W. Va.
Ralph Fletcher Davis	St. Mary's Hospital, Waterbury, Conn.
Eduardo de Alba, Jr.	Santo Tomás Hospital, Panama, R. P.
John Murray Dennis	University Hospital, Baltimore, Md.
John Pell Doenges	University Hospital, Baltimore, Md.
Vincent dePaul Fitzpatrick, Jr.	Mercy Hospital, Baltimore, Md.
William Leicester Foster	New York Polyclinic Medical School and Hospital, New York City
William Henry Frank	St. Joseph's Hospital, Baltimore, Md.
Joseph Brannen Ganey	University Hospital, Baltimore, Md.
Austin Edward Givens, Jr.	Allegheny General Hospital, Pittsburgh, Pa.
Helen Emily Greenleaf	Hospital for Women of Maryland, Baltimore, Md.
Arthur Thomas Hall, Jr.	St. Agnes' Hospital, Baltimore, Md.
Daniel Oscar Hamburger	Sinai Hospital, Baltimore, Md.
Howard Harry Haynes, Jr.	St. Luke's Hospital, San Francisco, Calif.
John Albert Hedrick	Mercy Hospital, Baltimore, Md.
John Francis Hennessy	St. Francis Hospital, Jersey City, N. J.
Stanley Edward Herrick, Jr.	St. Luke's Hospital, Chicago, Ill.
Albert Casper Herrmann	West Baltimore General Hospital, Baltimore, Md.
William Addison Holbrook, Jr.	University Hospital, Baltimore, Md.
Hector Anthony Hoyos-Napoleoni	West Baltimore General Hospital, Baltimore, Md.
Harry Hutchins	Crawford W. Long Memorial Hospital, Atlanta, Ga.
Stephen Ridinger Keister	Mercy Hospital, Pittsburgh, Pa.
Alexander Palmer Kelly, Jr.	Mercy Hospital, Baltimore, Md.
Richard Albert Kenworthy, III	Youngstown Hospital, Youngstown, Ohio
Leonard Terry Kurland	University Hospital, Baltimore, Md.
Daniel Bair Lemen	Colorado General Hospital, Denver, Colo.
Charles Milton Linthicum	Mercy Hospital, Baltimore, Md.

Graduates	*Internships*
Henry Francis Maguire	Newark City Hospital, Newark, N. J.
James Robinson McNinch, Jr.	University Hospital, Baltimore, Md.
Clarence Stockton Miller	General Hospital of Fresno County, Fresno, Calif.
Paul Robert Myers	Mercy Hospital, Baltimore, Md.
Alfred Simpson Norton	California Hospital, Santa Monica Branch, Los Angeles, Calif.
Allen Jay O'Neill	Central Dispensary and Emergency Hospital, Washington, D. C.
Roy Hamilton Ott, Jr.	University Hospital, Baltimore, Md.
Sumner Malone Parham	University Hospital, Baltimore, Md.
Robert DeWitt Peck	Church Home and Hospital, Baltimore, Md.
Malcolm Dudley Phillips	Maryland General Hospital, Baltimore, Md.
Warren Horton Pike, Jr.	Presbyterian Hospital, Chicago, Ill.
Joseph Edward Reahl	Mercy Hospital, Baltimore, Md.
William Henry Robinson	University Hospital, Baltimore, Md.
William Ansley Rodgers	St. Joseph's Hospital, Baltimore, Md.
Leah Rosenblatt	Hospital for Women of Maryland, Baltimore, Md.
John Lauchheimer Rosenthal	Sinai Hospital, Baltimore, Md.
Alvin David Rudo	Sinai Hospital, Baltimore, Md.
Marvin Rudo	Sinai Hospital, Baltimore, Md.
Hilarion Sanchez, Jr.	Mercy Hospital, Baltimore, Md.
James Henry Sbell, Jr.	New York Polyclinic Medical School and Hospital, New York City
Edward John Sokolski	Stamford Hospital, Stamford, Conn.
Anthony Frederick Augustine Stedem, Jr.	Mercy Hospital, Baltimore, Md.
Stanley Roy Steinbach	Sinai Hospital, Baltimore, Md.
Charles Wilbur Stewart, Jr.	Maryland General Hospital, Baltimore, Md.
Charles Strahan, Jr.	Mercy Hospital, Baltimore, Md.
Russell Barber Street, Jr.	Ancker Hospital, St. Paul, Minn.
Winston Lee Summerlin	New York Hospital, New York City
John Jerome Tansey	U. S. Naval Hospital
Paul Bernhardt Toms	Union Memorial Hospital, Baltimore, Md.
Allan Edward Trevaskis	Allentown Hospital, Allentown, Pa.
Victor Wagner	Kings County Hospital, Brooklyn, N. Y.
Harold Herbert Weinberg	South Baltimore General Hospital, Baltimore, Md.
Joseph Weintraub	Mercer Hospital, Trenton, N. J.
Thomas Easson Wheeler	South Baltimore General Hospital, Baltimore, Md.
Joseph McCurley White, III	South Baltimore General Hospital, Baltimore, Md.
Mary Louise Touchet White	South Baltimore General Hospital, Baltimore, Md.
Oliver Parry Winslow, Jr.	Collis P. and Howard Huntington Memorial Hospital, Pasadena, Calif.
Arthur Fletchall Woodward	Garfield Memorial Hospital, Washington, D. C.

VI. AWARDING OF HONORS: DR. ROBERT U. PATTERSON, *Dean*

UNIVERSITY PRIZE GOLD MEDALS

William Addison Holbrook, Jr.   Leonard Terry Kurland

CERTIFICATES OF HONOR

William Leicester Foster	Daniel Oscar Hamburger
John Lauchheimer Rosenthal	Anthony Frederick Augustine Stedem, Jr.

Joseph Edward Reahl

VII. ADMINISTERING OF OATH: H. BOYD WYLIE, M.D., *Professor of Biological Chemistry and Assistant Dean.*

SPONSIO ACADEMICA

I, ..., having received the required instruction in medical science and now qualified to receive a degree, do promise in the presence of a Holy God, Searcher of Hearts, that I will to the last breath of life continue in the duties of one grateful to the University and that furthermore I will employ my skill in medicine cautiously, conscientiously and honorably and, that so far as in me lies, I will faithfully look after all those things that are helpful in bringing about the health of bodies that are sick, and finally that I will not without urgent reason divulge those things either seen or heard during medical practice which should be kept secret. So may the Divine Being be present to witness my oath.

VIII. BENEDICTION: RT. REV. NOBLE C. POWELL, D.D., *Bishop of Maryland.*

IX. THE RECESSION: *March of the Priests*, Mendelssohn.

NEWS FROM THOSE IN THE ARMED FORCES

CITATIONS AND AWARDS

BRONZE STAR MEDAL

Major William F. Gassaway, Class of 1940, has been awarded the Bronze Star Medal for "meritorious service from 25 December, 1944 to 19 March, 1945, near Wingen, Philippsbourg, Behren, Styring Wendel, and Forbach, France. Under your tireless leadership both the regimental and battalion aid stations functioned in a superior manner throughout this entire period of action against the enemy. In addition, your efforts to prevent and cure trench foot kept the loss of personnel from that cause at a minimum Your unfailing supervision, and your ability in commanding the Medical Detachment under your control to fulfill the most difficult assignments were an invaluable contribution to the success of the 274th Infantry Regiment."

Entered the military service from Petersburg, Va.

Captain William S. M. Ling, Class of 1940, recently was awarded the Bronze Star Medal for heroism on the Anzio beachhead in Italy.

Before entering the service on September 1, 1941 Captain Ling interned at Misericordia Hospital in New York City. He has served in North Africa, Tunisia, Salerno and northern Burma, as well as in Italy.

Captain Stephen E. Muller, Class of 1937, and Captain James R. Karns, Class of 1940, have received the Bronze Star Medal for meritorious achievement in South Pacific military operations.

AIR MEDAL

Capt. M. Paul Byerly, Class of 1925, has been awarded the Air Medal.

NEWS ITEMS

Comdr. Herman Chor, M.C., U.S.N.R., Class of 1928, has been stationed in the Pacific for the past two years. He is head of the department of neuropsychiatry of one of the large naval base hospitals. In civilian life Commander Chor is Assistant Professor of the Department of Nervous and Mental Diseases of the Northwestern School of Medicine, Chicago, where he has been a member of the faculty since 1932.

Other alumni with the Navy in the Pacific are Comdr. Claude Russell Ball, Class of 1927, and Comdr. Oscar Yarborough, Class of 1928.

Lieut. Comdr. George F. Schmitt, M.C., U.S.N.R., Class of 1935, has compiled and written a diet formulary for use by the Navy's medical department. According to Vice Admiral Ross T. McIntire, Surgeon General of the Navy, this new volume should be a valuable addition to the list.

Lieut. Comdr. Lewis M. Overton, Class of 1929, is stationed at the Great Lakes Naval Hospital.

It has recently been learned that Lieut. Col. Harry S. Shelley, Class of 1931, has been serving as chief of the surgical service of the 101st Evacuation Hospital with General Patton's Third Army since July, 1944. He moved with that Army across France, into Belgium, Luxembourg, and then into Germany. The hospital has been extremely busy. During the first twenty days of January this hospital alone did 1200 operations.

Colonel Shelley has been awarded the Bronze Star Medal for "the high degree of professional skill he exhibited and his loyal devotion to duty" during the time the hospital was working under General Patton. This is his second citation, the first being the Legion of Merit for the rescue of a plane forced down in Jamaica in June, 1942.

Flight Surgeon Major H. Lawrence Sutton, Class of 1934, has been credited with the capture of a top Nazi air force chief, Field Marshall Robert Ritter von Greim. It is reported that Major Sutton discovered von Greim in a hospital at Salzburg and that the field marshall later committed suicide by taking poison.

Until he entered the service in June, 1942 Major Sutton practiced in Newark, N. J. He has been overseas since November, 1944, where he is attached to headquarters of the United States Group Control Council.

Lieut. August L. Ewald, Jr., M.C., U.S.N.R., Class of 1930, is serving in the Pacific theater of operations. Two days before the invasion of Okinawa Lieutenant Ewald rode a bosun's chair through a tropical storm in order to treat a marine stricken with spinal meningitis sixty miles from Okinawa.

Lieut. Morton E. Bassan, M.C., U.S.N.R., Class of 1942, has been serving with a 5th Fleet task force close to the Japanese home islands. In a recent divebombing attack sixty miles from Japan it was necessary for him to travel by whaleboat to treat the wounded on a stricken ship. Lieutenant Bassan supervised the transfer of the wounded personnel by breeches buoy to The Sullivans, on which he is serving as medical officer.

Lieut. Henry G. Ferri, Class of December, 1943, recently was graduated from the Army's School of Neuropsychiatry at Mason General Hospital, Brentwood, N. Y.

On May 22, 1945 Major Harry M. Robinson, Jr., who recently returned from India, addressed the members of the faculty and the student body in Gordon Wilson Hall. His talk was accompanied by motion pictures taken in the Fiji Islands and in India.

After a brief history of the processing of the 142nd General Hospital Unit Major Robinson related the route followed to New Zealand, then to Lautoka, and finally to the Sabeto Valley, Fiji, where the first hospital was officially opened in tents on July 11, 1942. A large hospital was constructed in this area and was nearing completion in January, 1943, when the Unit was moved to Suva. Here they took over a partially constructed hospital at Tamavua Ridge. The 142nd General Hospital expanded considerably and remained at this site until September, 1944, when it was moved to India. During its stay in the Fiji Islands its members carried out considerable research in addition to the service rendered several famous divisions.

En route to India a stop was made at Melbourne. In October the Unit arrived in Bombay and then proceeded by troop trains to Calcutta. These trains are beyond description and resemble those used in World War I. After riding for five and a half days across India the Unit arrived in Calcutta and proceeded to the 263rd General Hospital, where it was billeted. Within several days a 2000 bed general hospital was organized and operations were started in the 263rd General Hospital. Everyone was kept busy in his own field and there was plenty of opportunity to observe and treat many rare diseases peculiar to that area.

Rotation began early in 1945 and gradually various members of the original personnel returned to the United States. Major Robinson received his orders late in March and en route to this country he saw Colonel George H. Yeager in Australia.

The motion pictures taken by Major Robinson vividly portrayed the scenic beauty of the Fijis and Calcutta, as well as the living conditions and habits of the natives.

ABSTRACT FROM ITALY

Things have progressed here at a rapid pace. The fighting boys have done a remarkable job, one that we can all be proud of. The going was tough at times but the high spirits and morale were the deciding factors in our favor. My forward aid station was moved many times. It formerly was located in a building greatly damaged by previous shellings and bombings. Two rooms remained intact. One was used as the aid room, the other for sleeping quarters. Two of the aid men were excellent cooks, so with dickering among the Italians some very good meals were enjoyed on occasion. As a whole, the setup was good. The aid station was then moved to an undertaking establishment. There was plenty of room to work in but the atmosphere was none too appealing to the patients, particularly when they noticed that two coffin boxes were used for support of the litters.

The embalming room afforded sleeping quarters for the aid men. Even though they had seen any number of corpses they were still a little leery of their sleeping quarters. One of the boys from Alabama preferred to sleep out in the open. On several occasions I have not had sufficient time to set up before the order came to pack and start moving for some other location.

The souvenirs have been plentiful. I have been able to get quite a number of German made instruments that were left behind when a sudden departure was necessary. These I hope to bring home one of these days.

A word about the surrounding country. The valley is very fertile. All the crops are beautiful and approximately ten to twelve weeks in advance of those in Maryland. Grain is the chief product, with vegetables second, mainly potatoes and tomatoes. All available space is utilized; even strips of land between a ditch and road are cultivated. The grapevines are netted between straight rows of fruit trees so that no farm ground is wasted.

The average farm home is well constructed and very nice looking from the outside. The furnishings are scanty and confined to the bare essentials, except for the numerous pictures found on the walls. There is no such thing as plumbing. Water is brought from the well and kept in appropriate containers located throughout the house. Canals seem to be present everywhere and certainly have been a nuisance in the advance.

The partisans have done a lot in helping us, but one never knows when an excitable partisan is going to shout at the top of his voice and fire a rifle too close for comfort. They appear emotionally unstable and love to show off.

I recently enjoyed a rest period in Rome. It really was nice once again to get in a position to relax and enjoy the more modern things of life. The rest center is quite a place. I spent most of my mornings sightseeing. Vatican City and St. Peter's Church were probably the most interesting. To my regret I missed the Cistine Chapel, for it was closed to visitors the morning I was there.

A little news about one of my classmates, William Currence from West Virginia. After finishing in 1942 he took an internship in an Army hospital and went in through the regular Army. He is now a major and is C.O. of the clearing company of the 10th Mountain Division. When I was in the replacement depot I ran into Captain Downing who roomed with Turk Adams in medical school, also a Colonel Ostendorf, a classmate of Dr. Edwards. So there are many University of Maryland alumni represented in this theater of operations.

Must stop now.

Regards to all,
BILL BYERLY
(Capt. William L. Byerly, Class of 1942)

ITEMS

A testimonial dinner was tendered Dr. Henry J. Walton on June 14, 1945 at the Belvedere Hotel upon his retirement as Professor of Roentgenology. Sixty-five members of the faculty gathered to pay tribute to Dr. Walton and presented him with a handsome gift as a token of their esteem. Dr. H. M. Bubert, Assistant Professor of Medicine, was chairman of the committee on arrangements and served as toastmaster for the occasion.

Dr. Walton graduated from the Baltimore Medical College in 1906 and served almost continually with the Department of Roentgenology from 1913 to the date of his retirement.

Dr. H. A. B. Dunning of the firm of Hynson, Westcott and Dunning of Baltimore, has awarded to the Department of Pharmacology of the School of Medicine, University of Maryland, the sum of $1,000 to be used for research in this department.

Dr. Ralph S. Chenowith, Class of March, 1943, is now living in White Sulphur Springs, W. Va., where he is associated with Dr. W. E. Myles.

MEDICAL LIBRARY NOTES

Many fine improvements are to be noted in the recently completed restoration of Davidge Hall. A modern and attractive lighting system has been installed throughout the library. The window bookcases were removed to expose to full view the beauty of the stained glass windows. The attractive new color scheme developed in the painting of the interior deserves special mention and serves as a pleasant background for the many useful and valuable volumes to be found here. With the completion of the painting of the outside of the building the present renovation has provided a creditable environment for those who enjoy its excellent facilities.

OBITUARIES

EDGAR G. BALLENGER, M.D.

Dr. Edgar G. Ballenger of Atlanta, Ga., President of the Southern Medical Association, died on June 1, 1945 as the result of a tragic fall in the hotel where he had been living.

Edgar G. Ballenger, M.D.

Born on November 20, 1877 in the Blue Ridge Mountains near Tryon, N. C., Dr. Ballenger attended Furman University, the University of North Carolina, and the University of Maryland, where he received his degree as doctor of medicine in 1901. He served an internship at the University Hospital and worked as company surgeon for an industrial concern before starting his practice in 1904 in Atlanta. During World War I he served with the Emory Base Hospital Unit and later was transferred to the 26th Division as chief urologist. Dr. Ballenger was one of the first to introduce "606" to the United States and was the author of several widely used books on genito-urinary diseases.

In 1930 Dr. Ballenger was instrumental in organizing the Southeastern Surgical Congress and was its first president. He was a fellow of the American Medical Association and of the American College of Surgeons. He also served as President of the Fulton County Medical Society in 1911, of the Southeastern Section of the American Urological Association from 1934 to 1935, and of the entire association in 1938 and 1939. He was one of Atlanta's best loved citizens and his untimely death is a great loss to that community and the medical profession.

MAJOR JAMES RUSSELL BELL

Major James Russell Bell, Class of 1932, died near Prestwick, Scotland on December 10, 1944 as the result of an aircraft crash in routine flight. He began active duty as a captain in the Medical Corps on June 5, 1942 and later was promoted to the rank which he held at the time of his death.

CAPT. LEWIS H. JANNARONE

Capt. Lewis H. Jannarone, Class of 1939, died at Walter Reed General Hospital on October 31, 1944. After graduation he interned at Mountain Side Hospital, Verona, N. J., and the Jersey City Medical Center. He entered the Army in October, 1941 and went overseas in January, 1944 with the 4th Infantry Division of the First Army. Captain Jannarone was awarded the Bronze Star Medal for his work on D-day.

The alumni regret the passing of this promising young physician.

JOHN ALLEN MURRAY, M.D.

Dr. John A. Murray of Patton, Pa., one of the oldest members of the Alumni Association, died on February 27, 1945. After graduating from the School of Medicine, University of Maryland in 1885, he attended Jefferson Medical College in Philadelphia, where he pursued a course in operative surgery and gynecology. He organized a hospital in Clearfield and later entered into partnership with his brother, Dr. V. A. Murray, in Patton.

Dr. Murray retired in 1938 after completing fifty-three years of active medical and surgical practice.

W. P. E. WYSE, M.D.

On March 12, 1945 Dr. W. P. E. Wyse, an alumnus of the Class of 1886, while operating his automobile at York Road and Register Avenue was struck by another automobile and died forty minutes later in the accident room of the Union Memorial Hospital. With him was Mrs. Wyse, who was found dead beside the automobile and probably had been killed instantly.

After his graduation Dr. Wyse interned at Bay View, now the Baltimore City Hospitals. Upon the completion of his internship he entered practice in the house in which he was born and which had been built by his paternal grandfather in 1809. The estate, known as Deer Park, is located on Smith Avenue about one mile from the center of the village of Pikesville.

During his practice of over five and a half decades in Pikesville, the surrounding section of Baltimore County and the Green Spring Valley, Dr. Wyse became known widely, made friends quickly, and maintained such friendships because of his honesty, truthfulness, and geniality. He was civically minded and in view of his historical background in that section he was vitally interested in the former Confederate Home in Pikesville. He loved the old place so greatly that he established an office there so as to be among the charms of its environs and its "Stars and Bars" atmosphere.

Dr. Wyse was a member of the Flint Club, the University Club, and various civic societies. For the past several years he served as Medical Examiner of Baltimore County. He was a member of the staff of the Mount Hope Retreat and the Rosewood Training School, and gave generously of his time and skill to the poor of his community at all times with a feeling of pride and honor.

Those who knew Dr. Wyse feel his tragic death keenly and will miss him at the medical meetings and assemblages that he formerly attended.

JOHN F. HOGAN, M.D.

Bennett, William Hurlburt, Norwell, Mass.; B.M.C., class of 1892; aged 76; died, March 5, 1945, of acute dilatation of the heart and diabetes mellitus.

Blanding, Abram Louis, Fountain Inn, S. C.; class of 1881; aged 86; died, February 25, 1945.

Brevard, Ephraim Mays, Tallahassee, Fla.; class of 1894; aged 74; served during the Spanish American War; died, February 26, 1945, of cerebral hemorrhage, diabetes mellitus, and mitral regurgitation.

Carrigan, Eugene E. S., Pleasant Beach, N. J.; B.M.C., class of 1896; aged 76; died, January 21, 1945, of hypertensive heart disease.

Cox, Thomas Benton, Lawndale, Calif.; B.M.C., class of 1894; aged 77; died, December 24, 1944.

Donohue, Bernard Walker, Baltimore, Md.; class of 1931; aged 39; died, August 19, 1944.

Flowers, Edward Newton, Clarksburg, W. Va.; P. & S., class of 1893; aged 78; died, January 25, 1945, of cerebrovascular arteriosclerosis and bronchopneumonia.

Gary, Benjamin Roscoe, Newport News, Va.; class of 1891; aged 76; died, February 13, 1945, of chronic nephritis.

Henry, Hugh William, Pittsburgh, Pa.; P. & S., class of 1910; aged 60; died, January 4, 1945, of coronary occlusion.

Hunt, Benjamin Franklin, Mechanicsburg, Pa.; B.M.C., class of 1897; aged 78; died, March 4, 1945, of burns.

Jones, Robert DuVal, New Bern, N. C.; class of 1896; aged 71; served during World War I; died, March 2, 1945, of heart disease.

Long, Oscar Leslie, Portland, Me.; B.M.C., class of 1898; aged 71; died, March 9, 1945, of pulmonary edema, cerebral hemorrhage, and arteriosclerosis.

MacWhinnie, Arthur Morgan, Seattle, Wash.; B.M.C., class of 1897; aged 70; died, February 28, 1945, of arteriosclerosis and cardiorenal disease.

McLean, Herbert Edmund, Jersey City, N. J.; class of 1923; aged 47; died, January 9, 1945.

McPartland, Patrick Farrell, Hartford, Conn.; B.M.C., class of 1905; aged 64; died, January 28, 1945, of coronary thrombosis.

Mayoral-Parracia, Joaquin, Havana, Cuba; class of 1919; died, March 17, 1945, of cerebral hemorrhage.

Minor, Michael W., Comorn, Va.; class of 1891; aged 77; died, January 31, 1945, of cerebral hemorrhage.

O'Neil, William Henry, Ansonia, Conn.; B.M.C., class of 1911; aged 61; died, January 27, 1945, of cerebral hemorrhage.

Paganelli, Terigi Richard, New York City; P. & S., class of 1903; aged 63; died, February 18, 1945, of coronary thrombosis.

Rea, John G., Union City, N. J.; B.M.C., class of 1904; served during World War I; aged 65; died, March 11, 1945, of heart disease.

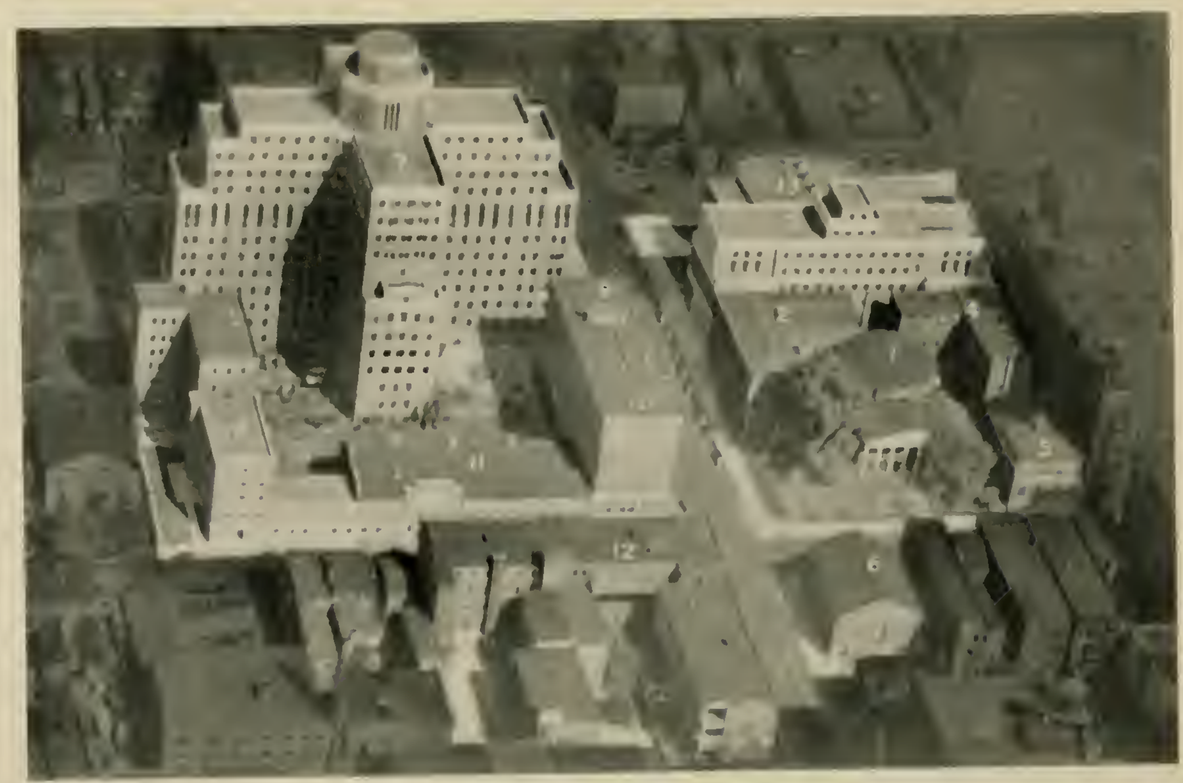
Shaw, Charles Augustus, Springfield, Mass.; B.M.C., class of 1906; aged 65; died, December 23, 1944, of hypostatic pneumonia, decompensated heart disease, and coronary sclerosis.

Shoemaker, William James, Lock Haven, Pa.; class of 1882; aged 92; died, January 22, 1945, of bronchitis.

Smith, John William, Branchville, Va.; class of 1906; aged 73; died, February 25, 1945, of coronary disease.

Steuart, George H., Ottoman, Va.; class of 1899; aged 79; died, January 6, 1945, of angina pectoris.

Tillapaugh, Frederick S., Hannibal, N. Y.; P. & S., class of 1888; aged 85; died, January 10, 1945, of arteriosclerotic heart disease.



Baltimore Schools—University of Maryland

1. Original Medical Building
2. Laboratory Building, Medicine
3. Bressler Building, Medicine
4. Gray Laboratory, Student's Lounge, Medicine
5. Administration Building, College of Education, Baltimore Division
6. Medical Library
7. University Hospital
8. Nurses' Home, Medicine
9. School of Pharmacy
10. School of Dentistry
11. Dental Clinic
12. Out-Patient Clinics, Medicine
13. School of Law

BULLETIN

OF THE

SCHOOL *of* MEDICINE

UNIVERSITY OF MARYLAND

Announcements

The One Hundred Fortieth Academic Session

1945–1946

Catalogue for Sessions January 13, 1944–September 29, 1944

and October 19, 1944–June 22, 1945

SEPTEMBER, 1945

CONTENTS

PAGE

Calendar.............................. 4
Calendars for 1945, 1946............. 5
Partial Calendar 6
Organization......................... 9
  Board of Regents.................. 9
  University Senate................. 10
  Faculty of Medicine............... 11
Fellows.............................. 20
University Hospital.................. 21
  Executive Committee............... 21
  Hospital Staff.................... 21
  Resident and Intern Staff......... 23
  Dispensary Staff.................. 25
  Dispensary Report................. 29
Mercy Hospital....................... 30
  Hospital Staff.................... 30
  Resident and Intern Staff......... 34
  Dispensary Staff.................. 35
  Dispensary Report................. 37
Baltimore City Hospitals—Staff....... 38
Kernan Hospital—Staff................ 40
The School of Medicine............... 41
  History........................... 41
  Buildings and Facilities.......... 41
Wartime Requirements for Admission.. 46
Standard Requirements for Admission. 48
  Application....................... 48
  Minimum Requirements.............. 48
  Combined Course in Arts and Sciences, and Medicine.............. 49
State Medical Student Qualifying Certificates.......................... 50
Definition of Residence Status........ 50
Current Fees......................... 50
Rules for Payment of Fees............ 51
Penalty for Non-Payment of Fees..... 51
Reexamination Fee 51
Maintenance and Service Fee......... 51
Personal Expenses.................... 52
Student Health Service............... 52
General Rules........................ 53
Prizes............................... 54
Scholarships......................... 54
Loan Funds........................... 57
Organization of the Curriculum....... 58
  Anaesthesia....................... 74
  Art as Applied to Medicine......... 84
  Bacteriology and Immunology...... 60
  Biological Chemistry.............. 61
  Biometrics, Elementary........... 84
  Clinical Pathology................ 66
  Dermatology....................... 75
  First Aid......................... 80
  Gastro-Enterology................. 67

PAGE

  Genito-Urinary Surgery............ 76
  Gross Anatomy..................... 58
  Gynecology........................ 82
  Histology and Embryology......... 59
  History of Medicine.............. 84
  Hygiene and Public Health......... 70
  Industrial Medicine and Surgery.... 79
  Legal Medicine.................... 70
  Medicine.......................... 62
  Neuro-Anatomy..................... 59
  Neurological Surgery.............. 78
  Neurology......................... 69
  Obstetrics........................ 80
  Oncology.......................... 78
  Ophthalmology..................... 83
  Oral Surgery...................... 79
  Orthopaedic Surgery............... 75
  Otology........................... 77
  Pathology......................... 61
  Pediatrics........................ 68
  Pharmacology...................... 61
  Physiology........................ 60
  Plastic Surgery................... 80
  Psychiatry........................ 67
  Rectum and Colon.................. 77
  Rhinology and Laryngology 76
  Roentgenology..................... 83
  Surgery........................... 71
Schedules of Courses................. 85
Graduates, September 29, 1944........ 90
Internships, Graduates of September 29, 1944.......................... 92
Matriculates, January 13 to September 29, 1944 94
Geographical Distribution of Students, January 13 to September 29, 1944. 100
College Sources of Students, January 13 to September 29, 1944 101
Graduates, June 22, 1945 102
Internships, Graduates of June 22, 1945 103
Matriculates, October 19 to June 22, 1945 106
Geographical Distribution of Students, October 19 to June 22, 1945......113
College Sources of Students, October 19 to June 22, 1945.............113
Medical Alumni Association..........115
Endowment Fund.....................115
University of Maryland School of Nursing..........................116
Mercy Hospital School of Nursing.....119
Index of Names......................119

CALENDAR

1945

JULY

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SOPHOMORE, JUNIOR AND SENIOR CALENDAR

ACCELERATED PROGRAM, SESSION 1945–1946

Academic Year—July 19, 1945 to March 22, 1946

1945		
July 12 and 13		Re-examinations for advancement
		FIRST SEMESTER
July 17	Tuesday	*Registration, Sophomores
July 18	Wednesday	*Registration, Juniors and Seniors
July 19	Thursday	Instruction begins 8:30 A.M.
September 1	Saturday	Instruction suspended 2:00 P.M.
September 3	Monday	Labor Day—Holiday
September 4	Tuesday	Instruction resumed 8:30 A.M.
November 5	Monday	Examinations, all classes
to		*Registration for second semester
November 10	Saturday	First semester completed 2:00 P.M.
		SECOND SEMESTER
November 12	Monday	Instruction resumed 8:30 A.M.
November 21	Wednesday	Instruction suspended 5:00 P.M.
November 22	Thursday	Thanksgiving Day—Holiday
November 23	Friday	Instruction resumed 8:30 A.M.
December 21	Friday	Instruction suspended 5:00 P.M. Christmas Recess
1946		
January 3	Thursday	Instruction resumed 8:30 A.M.
February 21	Thursday	Instruction suspended 5:00 P.M.
February 22	Friday	Washington's Birthday—Holiday
February 23	Saturday	Instruction resumed 8:30 A.M.
March 2	Saturday	Senior and Junior instruction ends at 2:00 P.M.
March 4	Monday	Senior and Junior examinations begin
March 9	Saturday	Senior examinations completed at 12 noon Sophomore instruction ends at 12 noon
March 11	Monday	Junior examinations continue Sophomore examinations begin
March 16	Saturday	Announcement of graduates All examinations completed Second semester completed at 1:00 P.M.
March 22	Friday	Graduation in Baltimore 8:00 P.M.
April 4 and 5		Re-examinations for advancement

(See page 7 for Junior and Senior Accelerated Calendar, Session 1946)

---

* A student who fails to register prior to or within the day or days specified will be called upon to pay a late registration fee of five dollars ($5.00). The last day of registration with fee added to regular charges is Saturday of the week in which registration begins.

The offices of the registrar and comptroller are open daily from 9:00 A.M. to 5:00 P.M., and Saturday from 9:00 A.M. to 12:00 noon.

FRESHMAN CALENDAR

ACCELERATED PROGRAM—SESSION 1945-1946

ACADEMIC YEAR—SEPTEMBER 20, 1945 to MAY 25, 1946

FIRST SEMESTER

1945		
September 19	Wednesday	*Registration
September 20	Thursday	Instruction begins 9:30 A.M.
November 21	Wednesday	Instruction suspended 5:00 P.M.
November 22	Thursday	Thanksgiving Day—Holiday
November 23	Friday	Instruction resumed 9:00 A.M.
December 21	Friday	Instruction suspended 5:00 P.M.
		Christmas recess
1946		
January 3	Thursday	Instruction resumed 9:00 A.M.
January 21	Monday	Examinations
to		*Registration for second semester
January 26	Saturday	First semester completed 2:00 P.M.

SECOND SEMESTER

January 28	Monday	Instruction resumed 9:00 A.M.
February 21	Thursday	Instruction suspended 5:00 P.M.
February 22	Friday	Washington's Birthday—Holiday
February 23	Saturday	Instruction resumed 9:00 A.M.
April 18	Thursday	Instruction suspended 5:00 P.M.
		Easter recess
April 22	Monday	Instruction resumed 9:00 A.M.
May 18	Saturday	Instruction suspended 12:00 noon
May 20	Monday	Examinations begin
May 25	Saturday	Examinations completed
		Second semester completed at 1:00 P.M.
June 13, 14		Re-examinations for advancement

(See page 8 for Sophomore Accelerated Calendar, Session 1946-1947)

PARTIAL FRESHMAN CALENDAR

ACADEMIC YEAR—SEPTEMBER 19, 1946 to MAY 24, 1947

1946		
September 18	Wednesday	*Registration
September 19	Thursday	Instruction begins 9:30 A.M.

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The offices of the registrar and comptroller are open daily from 9:00 A.M. to 5:00 P.M., and Saturday from 9:00 A.M. to 12:00 noon.

JUNIOR AND SENIOR CALENDAR

CONTINGENT ACCELERATED PROGRAM—1946

ACADEMIC YEAR—APRIL 11 TO DECEMBER 20, 1946

1946		
April 4 and 5		Re-examinations for advancement
		FIRST SEMESTER
April 10	Wednesday	*Registration
April 11	Thursday	Instruction begins 8:30 A.M.
April 18	Thursday	Instruction suspended 5:00 P.M. Easter recess
April 22	Monday	Instruction resumed 8:30 A.M.
May 29	Wednesday	Instruction suspended 5:00 P.M.
May 30	Thursday	Memorial Day—Holiday
May 31	Friday	Instruction resumed 8:30 A.M.
July 3	Wednesday	Instruction suspended 5:00 P.M.
July 4	Thursday	Independence Day—Holiday
July 5	Friday	Instruction resumed 8:30 A.M.
July 29	Monday	Examinations
to		*Registration for second semester
August 3	Saturday	First semester completed 2:00 P.M.
August 5 to August 24		Summer vacation
		SECOND SEMESTER
August 26	Monday	Instruction resumed 8:30 A.M.
August 31	Saturday	Instruction suspended 2:00 P.M.
September 2	Monday	Labor Day—Holiday
September 3	Tuesday	Instruction resumed 8:30 A.M.
November 27	Wednesday	Instruction suspended 5:00 P.M.
November 28	Thursday	Thanksgiving Day—Holiday
November 29	Friday	Instruction resumed 8:30 A.M.
November 30	Saturday	Instruction ends at 2:00 P.M.
December 2	Monday	Senior and Junior examinations begin
December 7	Saturday	Senior examinations completed 12 noon
December 9	Monday	Junior examinations continue
December 14	Saturday	Announcement of graduates Junior examinations completed Second semester completed 1:00 P.M.
December 20	Friday	Graduation in Baltimore 8:00 P.M.
1947		
January 3 and 4		Re-examinations for advancement

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SOPHOMORE CALENDAR

CONTINGENT ACCELERATED PROGRAM—SESSION 1946–1947

ACADEMIC YEAR—JUNE 20, 1946 TO MARCH 8, 1947

1946		
June 13 and 14		Re-examinations for advancement

FIRST SEMESTER

June 19	Wednesday	*Registration
June 20	Thursday	Instruction begins 8:30 A.M.
July 3	Wednesday	Instruction suspended 5:00 P.M.
July 4	Thursday	Independence Day—Holiday
July 5	Friday	Instruction resumed 8:30 A.M.
August 3	Saturday	Instruction suspended 2:00 P.M.
August 5–24		Summer vacation
August 26	Monday	Instruction resumed 8:30 A.M.
August 31	Saturday	Instruction suspended 2:00 P.M.
September 2	Monday	Labor Day—Holiday
September 3	Tuesday	Instruction resumed 8:30 A.M.
October 26	Saturday	Instruction suspended 2:00 P.M.
October 28	Monday	Examinations
to		*Registration for second semester
November 2	Saturday	First semester completed 12:30 P.M.

SECOND SEMESTER

November 4	Monday	Instruction resumed 8:30 A.M.
November 27	Wednesday	Instruction suspended 5:00 P.M.
November 28	Thursday	Thanksgiving Day—Holiday
November 29	Friday	Instruction resumed 8:30 P.M.
December 21	Saturday	Instruction suspended 2:00 P.M. Christmas recess
1947		
January 3	Friday	Instruction resumed 8:30 A.M.
February 21	Friday	Instruction suspended 5:00 P.M.
February 24	Monday	Instruction resumed 8:30 A.M.
March 1	Saturday	Instruction suspended 12:00 noon
March 3	Monday	Examinations begin
March 8	Saturday	Examinations completed Second semester completed 12:30 P.M.
April 3 and 4		Re-examinations for advancement

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* A student who fails to register prior to or within the day or days specified will be called upon to pay a late registration fee of five dollars ($5.00). The last day of registration with fee added to regular charges is Saturday of the week in which registration begins.

The offices of the registrar and comptroller are open daily from 9:00 A.M. to 5:00 P.M., and Saturday from 9:00 A.M. to 12:00 noon.

ORGANIZATION

THE UNIVERSITY OF MARYLAND

Harry Clifton Byrd, B.S., LL.D., D.Sc., *President and Executive Officer*

BOARD OF REGENTS

	Term Expires
William P. Cole, Jr., *Chairman*	1949
Mrs. John L. Whitehurst, *Secretary*	1947
J. Milton Patterson, *Treasurer*	1944
E. Paul Knotts	1954
Harry H. Nuttle	1950
Philip C. Turner	1950
Glenn L. Martin	1951
John E. Semmes	1951
Thomas R. Brookes	1952
Stanford Z. Rothschild	1952

The control of the University of Maryland is assigned to a Board of Regents appointed by the Governor and confirmed by the Senate for terms of nine years each. The general administration of the University is vested in the President. The University Council is an advisory body, composed of the President, the Director of the Agricultural Experiment Station, the Director of the Extension Service, and the Deans. The University Council acts upon all matters having relation to the University as a whole, or to co-operative work between the constituent groups. Each school has its own Faculty Council, composed of the Dean and members of its faculty; each Faculty Council controls the internal affairs of the group it represents.

The University has the following educational organizations:

At Baltimore

The School of Dentistry
The School of Law
The School of Medicine
The School of Nursing
The School of Pharmacy

At College Park

The College of Agriculture
The College of Arts and Sciences
The College of Commerce
The College of Education
The College of Engineering
The College of Home Economics
The Graduate School
The Department of Military Science and Tactics
The Department of Physical Education and Recreation
The Summer School

THE UNIVERSITY SENATE

(Baltimore Schools)

H. C. Byrd, B.S., LL.D., D.Sc.	President of the University
Rob't. U. Patterson, M.D., C.M., LL.D.	Dean of School of Medicine and Superintendent of the Hospital
H. Boyd Wylie, M.D.	Assistant Dean of School of Medicine
Roger Howell, Ph.D., LL.B.	Dean of the School of Law
Andrew G. DuMez, M.S., Ph.D.	Dean of the School of Pharmacy
J. Ben Robinson, D.D.S., F.A.C.D.	Dean of the School of Dentistry
J. Freeman Pyle, Ph.D.	Acting Dean of the College of Arts and Sciences
Alma H. Preinkert, M.A.	Registrar
Edgar F. Long, Ph.D.	Acting Director of Admissions

FACULTY OF MEDICINE

EMERITI

J. Frank Crouch, M.D.	Professor of Clinical Ophthalmology and Otology, Emeritus
Harry Friedenwald, A.B., M.D., D.H.L., D.Sc.	Professor of Ophthalmology, Emeritus
William S. Gardner, M.D.	Professor of Gynecology, Emeritus
J. M. H. Rowland, M.D., D.Sc., LL.D.	Professor of Obstetrics, Emeritus; Dean, Emeritus
J. Dawson Reeder, M.D.	Professor of Diseases of the Rectum and Colon, Emeritus
Henry J. Walton, M.D.	Professor of Roentgenology, Emeritus

FACULTY BOARD

Rob't. U. Patterson, *Dean*

H. Boyd Wylie, *Assistant Dean*

William R. Amberson
Thomas B. Aycock
Charles Bagley, Jr.
Otto C. Brantigan
Howard M. Bubert
T. Nelson Carey
C. Jelleff Carr
Ross McC. Chapman
Clyde A. Clapp
Beverly C. Compton
Albertus Cotton
Carl L. Davis
E. Hollister Davis
Louis H. Douglass
Page Edmunds
Charles Reid Edwards
Frank H. J. Figge
Andrew C. Gillis
Frank W. Hachtel
O. G. Harne
J. Mason Hundley, Jr.
Elliott H. Hutchins
C. Loring Joslin
Edward A. Kitlowski
John C. Krantz, Jr.
G. Carroll Lockard
Edward A. Looper
Howard J. Maldeis
James G. McAlpine
Zachariah Morgan
Thomas R. O'Rourk
C. W. Peake
H. R. Peters
J. G. M. Reese
Charles A. Reifschneider
Harry M. Robinson
Milton S. Sacks
Emil G. Schmidt
Arthur M. Shipley
Dietrich C. Smith
Irving J. Spear
Hugh R. Spencer
Thomas P. Sprunt
W. Houston Toulson
Ralph P. Truitt
Eduard Uhlenhuth
Allen Fiske Voshell
Huntington Williams
Walter D. Wise
Thomas C. Wolff
Robert B. Wright

EXECUTIVE COMMITTEE OF THE FACULTY

Rob't. U. Patterson, *Dean*
H. Boyd Wylie, *Assistant Dean*

Louis H. Douglass
Charles Reid Edwards
Frank W. Hachtel
J. Mason Hundley, Jr.
Arthur M. Shipley
Hugh R. Spencer
Thomas P. Sprunt

FACULTY OF MEDICINE

PROFESSORS

William R. Amberson, Ph.D., Professor of Physiology.
Thomas B. Aycock, B.S., M.D., Professor of Clinical Surgery.
Charles Bagley, Jr., M.A., M.D., Professor of Neurological Surgery.
Harvey G. Beck, M.D., D.Sc., Professor of Clinical Medicine.
Charles F. Blake, M.A., M.D., Professor of Diseases of the Rectum and Colon.
Otto C. Brantigan, B.S., M.D., Professor of Surgical Anatomy, Associate Professor of Surgery.
Ross McC. Chapman, M.D., Professor of Psychiatry.
Clyde A. Clapp, M.D., Professor of Ophthalmology.
Richard G. Coblentz, M.A., M.D., Clinical Professor of Neurological Surgery.
Albertus Cotton, M.A., M.D., Professor of Orthopaedic Surgery and Roentgenology.
Carl L. Davis, M.D., Professor of Anatomy.
*Brice M. Dorsey, D.D.S., Professor of Oral Surgery.
Louis H. Douglass, M.D., Professor of Obstetrics.
Page Edmunds, M.D., Professor of Traumatic Surgery.
Charles Reid Edwards, M.D., Professor of Surgery.
*Monte Edwards, M.D., Clinical Professor of Surgery and of Diseases of the Rectum and Colon.
H. K. Fleck, M.D., Clinical Professor of Ophthalmology.
Edgar B. Friedenwald, M.D., Professor of Clinical Pediatrics.
Thomas K. Galvin, M.D., Clinical Professor of Gynecology.
Joseph E. Gichner, M.D., Professor of Clinical Medicine and Physical Therapeutics.
Andrew C. Gillis, M.A., M.D., LL.D., Professor of Neurology.
Frank W. Hachtel, M.D., Professor of Bacteriology.
J. Mason Hundley, Jr., M.A., M.D., Professor of Gynecology.
Elliott H. Hutchins, M.A., M.D., Professor of Surgery.
F. L. Jennings, M.D., Professor of Clinical Surgery.
C. Loring Joslin, M.D., Professor of Pediatrics.
§M. Randolph Kahn, M.D., Clinical Professor of Ophthalmology.
*Walter L. Kilby, M.D., Acting Professor of Roentgenology.
*Edward A. Kitlowski, A.B., M.D., Clinical Professor of Plastic Surgery.
John C. Krantz, Jr., Ph.D., D.Sc., Professor of Pharmacology.

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§ Died January 11, 1945.

It is to be noted that for convenience of reference the names of the members of the Faculty are listed in the forepart of this catalogue in alphabetical order. The names are listed in order of seniority under each preclinical and clinical department of the school on subsequent pages.

On the lists of the Faculty of Medicine and Fellows and the Hospital and Dispensary staffs are given the names and positions assigned during the sessions January 13, 1944 to September 29, 1944 and October 19, 1944 to June 22, 1945, unless otherwise indicated. Interim changes are noted as follows:

* On leave, military service.
* Promotions effective during the session October 19, 1944 to June 22, 1945.
† Appointments effective during the session October 19, 1944 to June 22, 1945.
‡ Resignations effective during the sessions January 13, 1944 to September 29, 1944 and October 19, 1944 to June 22, 1945.
§ Deaths—dates of.

Kenneth D. Legge, M.D., Professor of Clinical Genito-Urinary Surgery.
G. Carroll Lockard, M.D., Professor of Clinical Medicine.
Edward A. Looper, M.D., D.Oph., Professor of Rhinology and Laryngology.
†Frederick B. Mandeville, M.D., Professor of Clinical Surgery.
Theodore H. Morrison, M.D., Clinical Professor of Gastro-Enterology.
Thomas R. O'Rourk, M.D., Clinical Professor of Otology, Associate in Rhinology and Laryngology.
*D. J. Pessagno, A.B., M.D., Professor of Clinical Surgery.
H. Raymond Peters, A.B., M.D., Professor of Clinical Medicine.
*Maurice C. Pincoffs, B.S., M.D., Professor of Medicine.
*Charles A. Reifschneider, M.D., Clinical Professor of Traumatic Surgery and Oral Surgery.
Compton Riely, M.D., Clinical Professor of Orthopaedic Surgery.
Harry M. Robinson, Sr., M.D., Professor of Dermatology.
Arthur M. Shipley, M.D., D.Sc., Professor of Surgery.
Irving J. Spear, M.D., Professor of Neurology.
Hugh R. Spencer, M.D., Professor of Pathology.
Thomas P. Sprunt, A.B., M.D., Acting Head of the Department of Medicine and Professor of Clinical Medicine.
W. Houston Toulson, M.Sc., M.D., Professor of Genito-Urinary Surgery.
Eduard Uhlenhuth, Ph.D., Professor of Anatomy.
Allen Fiske Voshell, A.B., M.D., Professor of Orthopaedic Surgery.
‡Henry J. Walton, M.D., Professor of Roentgenology.
Huntington Williams, M.D., Dr. P.H., Professor of Hygiene and Public Health.
*Walter D. Wise, M.D., Professor of Surgery.
H. Boyd Wylie, M.D., Professor of Biological Chemistry and Assistant Dean.
Waitman F. Zinn, M.D., Clinical Professor of Rhinology and Laryngology.

ASSOCIATE PROFESSORS

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Walter A. Baetjer, A.B., M.D., Associate Professor of Medicine.
J. McFarland Bergland, B.S., M.D., Associate Professor of Obstetrics.
T. Nelson Carey, M.D., Associate Professor of Medicine and Physician in Charge of Medical Care of Students.
C. Jelleff Carr, Ph.D., Associate Professor of Pharmacology.
Thomas R. Chambers, A.B., M.D., Associate Professor of Surgery.
*Carl Dame Clarke, M.A., Associate Professor of Art as Applied to Medicine.
Paul W. Clough, B.S., M.D., Associate Professor of Medicine.
William Ellsworth Evans, Jr., Ph.D., Associate Professor of Pharmacology.
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Leon Freedom, M.D., Associate Professor of Neurology and Instructor in Pathology.
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*Leslie B. Hohman, M.D., Lecturer in Psychiatry.
†James C. Munch, Ph.D., Lecturer in Elementary Biometrics.
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[2]§ Died January 1, 1945.

★*George H. Brouillet, B.S., M.D., Instructor in Surgery.
Ann Virginia Brown, A.B., Instructor in Biological Chemistry.
*Henry F. Buettner, M.D., Instructor in Bacteriology.
*Harold H. Burns, M.D., Instructor in Surgery.
*M. Paul Byerly, M.D., Instructor in Pediatrics.
Lucile J. Caldwell, M.D., Instructor in Dermatology.
*Ernest I. Cornbrooks, Jr., A.B., M.D., Instructor in Gynecology.
*Edward F. Cotter, M.D., Instructor in Pathology, Assistant in Neurology.
★*Stuart G. Coughlan, B.S., M.D., Instructor in Surgery.
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*B. Matthew Debuskey, M.D., Instructor in Pediatrics.
W. Allen Deckert, A.B., M.D., Instructor in Gynecology and Assistant in Surgery and Obstetrics.
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*Francis G. Dickey, A.B., M.D., Instructor in Medicine.
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*William L. Fearing, M.D., Instructor in Neurology.
*Jerome Fineman, M.D., Instructor in Pediatrics.
*Philip D. Flynn, M.D., Instructor in Medicine.
*Irving Freeman, B.S., M.D., Instructor in Medicine.
★*William M. Garlick, A.B., M.D., Instructor in Surgery.
*George Govatos, A.B., M.D, Instructor in Surgery.
Robert L. Graham, A.B., M.D., Instructor in Pathology.
E. M. Hanrahan, A.B., M.D., Instructor in Surgery.
*Mary L. Hayleck, M.D., Instructor in Pediatrics.
*William G. Helfrich, B.S., M.D., Instructor in Medicine.
*Samuel T. Helms, B.S., M.D., Instructor in Medicine and Genito-Urinary Surgery.
W. Grafton Hersperger, A.B., M.D., Instructor in Medicine.
*F. A. Holden, M.D., Instructor in Ophthalmology.
Calvin Hyman, M.D., Instructor in Surgery.
*B. Wallace Inman, D.D.S., Instructor in Oral Surgery.
Conrad L. Inman, D.D.S., Instructor in Oral Surgery.
Meyer W. Jacobson, M.D., Instructor in Medicine.
Joye J. Jennings, A.B., Instructor in Physiology.
★*Joseph V. Jerardi, B.S., M.D., Instructor in Surgery.
William R. Johnson, M.D., Instructor in Surgery.
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*D. Frank Kaltreider, M.D., Instructor in Obstetrics.
Clyde F. Karns, B.S., M.D., Instructor in Surgery.
★*Howard F. Kinnamon, M.D., Instructor in Surgery.
*Lester N. Kolman, M.D., Instructor in Dermatology.
Vernon E. Krahl, B.S., M.S., Instructor in Gross Anatomy.
*A. Kremen, A.B., M.D., Instructor in Ophthalmology.
Milton C. Lang, M.D., Instructor in Ophthalmology.
*Arnold F. Lavenstein, Instructor in Pediatrics.
C. Edward Leach, M.D., Instructor in Medicine.
Samuel Legum, A.B., M.D., Instructor in Medicine.
Philip F. Lerner, A.B., M.D., Instructor in Neurology.

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Kurt Levy, M.D., Instructor in Medicine.
I. H. Maseritz, M.D., Instructor in Orthopaedic Surgery.
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*Frank K. Morris, A.B., M.D., Instructor in Gynecology and Obstetrics.
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John A. Myers, M.E.E., M.D., Instructor in Medicine, Assistant in Gastro-Enterology.
Francis McLaughlin, M.D., Instructor in Psychiatry.
Samuel Novey, M.D., Instructor in Psychiatry.
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Robert A. Reiter, A.B., M.D., Instructor in Medicine.
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**John F. Schaefer, B.S., M.D., Instructor in Surgery.
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†Patrick C. Phelan, Jr., A.B., M.D., Assistant in Surgery.
Leslie Harrell Pierce, B.S., M.D., Assistant in Medicine.
*Samuel E. Proctor, A.B., M.D., Assistant in Surgery.
*†J. Emmett Queen, A.B., M.D., Assistant in Medicine.
*Samuel T. R. Revell, B.S., M.D., Assistant in Medicine.
*Henry L. Rigdon, M.D., Assistant in Surgery.
*†Donald J. Roop, M.D., Assistant in Medicine.
*Clarence P. Scarborough, M.D., Assistant in Surgery.

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[1] Appointed October 1, 1944.

W. J. Schmitz, M.D., Assistant in Pediatrics.
*Theodore A. Schwartz, M.D., Assistant in Rhinology and Laryngology.
*Earle S. Scott, M.D., Assistant in Pediatrics.
*J. King B. E. Seegar, Jr., A.B., M.D., Assistant in Obstetrics.
*†Robert C. Sheppard, M.D., Assistant in Surgery.
†E. Roderick Shipley, A.B., M.D., Assistant in Surgery.
*George Silverton, A.B., M.D., Assistant in Medicine.
*Jerome Snyder, B.S., M.D., Assistant in Ophthalmology.
Samuel Snyder, M.D., Assistant in Medicine.
*Solomon Tanenbaum, M.D., Assistant in Dermatology.
T. J. Touhey, M.D., Assistant in Surgery.
Wilfred H. Townshend, Jr., A.B., M.D., Assistant in Medicine.
*W. H. Triplett, M.D., Assistant in Medicine.
*Hugh H. Trout, Jr., M.D., Assistant in Surgery.
*Frederick W. Waknitz, M.D., Assistant in Surgery.
*William K. Waller, A.B., M.D., Assistant in Medicine.
William Earl Weeks, M.D., Assistant in Pediatrics.
*†J. Carlton Wich, B.S., M.D., Assistant in Pediatrics.
†Milton J. Wilder, M.D., Assistant in Orthopaedic Surgery.
Albert R. Wilkerson, M.D., Assistant in Surgery.
Daniel Wilfson, Jr., A.B., M.D., Assistant in Medicine.

FELLOWS

Virginia M. Auld, A.B., Emerson Fellow in Pharmacology.
‡Jane Louise Banker, A.B., Weaver Fellow in Biological Chemistry.
Frederick K. Bell, Ph.D., U. S. Pharmacopoeia Fellow.
†deCamp B. Farson, A.B., Emerson Fellow in Pharmacology.
†Alvin H. Honigman, B.S., M.D., Weaver Fellow in Pathology.
†Helen A. Horn, A.B., M.D., Weaver Fellow in Pathology.
Harry K. Ivamota, Ph.D., Emerson Fellow in Pharmacology.
‡Ruth B. Law, B.S., Weaver Fellow in Histology and Embryology.
‡Margaret Virginia Palmer, A.M., M.D., Hitchcock Fellow in Medicine.
Dorothy K. Shipley, M.S., Fellow in Pharmacology.
Wilfred H. Townshend, Jr., A.B., M.D., Hitchcock Fellow in Medicine.
John A. Wagner, B.S., M.D., Hitchcock Fellow in Neurological Surgery.
Sylvia L. Pollack, B.S., Weaver Fellow in Physiology.

UNIVERSITY HOSPITAL

EXECUTIVE COMMITTEE OF THE STAFF

Rob't. U. Patterson, *Superintendent*
Harold A. Sayles, *Assistant Superintendent*
Ex officio

	Alternates
Hugh R. Spencer, *Chairman*	
Beverley C. Compton, *Vice Chairman*	
Thomas P. Sprunt	T. Nelson Carey
Arthur M. Shipley	Charles Reid Edwards
Louis H. Douglass	J. G. M. Reese
J. Mason Hundley, Jr.	
Clyde A. Clapp	Henry F. Graff
Edward A. Looper	Thomas R. O'Rourk
Charles N. Davidson	Donald J. Barnett
C. Loring Joslin	J. Edmund Bradley
William M. Seabold, *Secretary*	

UNIVERSITY HOSPITAL STAFF

Rob't U. Patterson, *Superintendent*
Harold A. Sayles, *Assistant Superintendent*

Physician-in-Chief	★Maurice C. Pincoffs
Acting Physician-in-Chief	Thomas P. Sprunt
Physicians	Walter A. Baetjer Thomas P. Sprunt John E. Legge ★Louis A. M. Krause G. Carroll Lockard Joseph E. Gichner William H. Smith ★William S. Love, Jr. T. Nelson Carey Raymond Hussey
Gastro-Enterologist	Zachariah R. Morgan
Neurologists	Irving J. Spear Leon Freedom
Psychiatrists	Ross McC. Chapman Ralph P. Truitt ★Harry M. Murdock
Pediatricians	C. Loring Joslin Albert Jaffe J. Edmund Bradley A. H. Finkelstein William M. Seabold
Pathologist	Hugh R. Spencer
Surgeon-in-Chief	Arthur M. Shipley

Surgeons	Charles Reid Edwards Page Edmunds Thomas B. Aycock
Neurological Surgeons	Charles Bagley, Jr. Richard G. Coblentz †James G. Arnold, Jr.
Laryngologists	Edward A. Looper Franklin B. Anderson Thomas R. O'Rourk
Proctologists	★Monte Edwards †Thurston R. Adams
Orthopaedic Surgeons	Allen Fiske Voshell Moses Gellman Compton Riely ★Henry F. Ullrich
Genito-Urinary Surgeons	W. Houston Toulson W. A. H. Councill Lyle J. Millan ★Harry S. Shelley ★Howard B. Mays
Roentgenologists	‡Henry J. Walton ★Walter L. Kilby Charles N. Davidson Donald J. Barnett
Dermatologist	Harry M. Robinson, Sr.
Bronchoscopist	Edward A. Looper
Otologist	†Thomas R. O'Rourk
Anaesthetists	Mary J. O'Brien, R.N. Kathleen S. Ruppert, R.N. Delia G. Amos, R.N. Carolyn W. Polleyette, R.N.
Obstetricians	Louis H. Douglass M. A. Novey Isadore A. Siegel J. G. M. Reese ★John E. Savage Hugh B. McNally
Ophthalmologists	Clyde A. Clapp Henry F. Graff F. Edwin Knowles, Jr.
Gynecologists	J. Mason Hundley, Jr. Leo Brady Beverley C. Compton
Oncologists	J. Mason Hundley, Jr. Grant E. Ward

ANNUAL HOSPITAL APPOINTMENTS

The following annual appointments* are made to the University Hospital:

Three Residents in Medicine
Seven Residents in Surgery
One Resident in Neurosurgery
Three Residents in Gynecology
Four Residents in Obstetrics
Two Residents in Pediatrics
One Resident in Roentgenology
Twenty-Four Rotating Interns

* The number of appointments has been reduced during the war as required by Headquarters of Procurement and Assignment Service, Washington, D. C.

UNIVERSITY HOSPITAL RESIDENT AND INTERN STAFF

OCTOBER 1, 1944 TO JUNE 30, 1945

RESIDENT STAFF

Alma C. Braun-Kelly, B.S., M.D., *Resident in Obstetrics.*
Joseph DeLuca, B.S., M.D., *Assistant Resident in Surgery.*
Thomas B. Dunne, A.B., M.D., *Resident in Obstetrics.*
William B. Hagan, B.S., M.D., *Assistant Resident in Surgery.*
[1]John S. Haught, A.B., M.D., *Assistant Resident in Gynecology.*
Charles H. Ingram, A.B., M.D., *Assistant Resident in Medicine.*
William D. Lynn, A.B., M.D., *Assistant Resident in Surgery.*
A. Robert Marks, A.B., M.D., *Assistant Resident in Pediatrics.*
Margaret Virginia Palmer, A.B., M.D., *Resident in Medicine.*
Jarvis D. Paschal, B.S., M.D., *Assistant Resident in Obstetrics.*
E. Thornton Pfeil, Jr., B.S., M.D., *Assistant Resident in Neurosurgery.*
John O. Robben, B.S., M.D., *Assistant Resident in Surgery.*
[2]Francis F. Ruzicka, Jr., A.B., M.D., *Resident in Roentgenology.*
E. Roderick Shipley, A.B., M.D., *Resident in Surgery.*
Frank M. Shipley, A.B., M.D., *Assistant Resident in Medicine.*
James S. Shortle, B.S., M.D., *Assistant Resident in Obstetrics.*
Edwin H. Stewart, Jr., M.D., *Assistant Resident in Surgery.*
[3]J. Carlton Wich, B.S., M.D., *Assistant Resident in Pediatrics.*
[4]Thomas L. Wilson, M.D., *Resident in Gynecology.*
[5]William O. Vennard, B.S., M.D., *Assistant Resident in Gynecology.*

INTERNS

Kenneth M. Browne, M.D.
Charles D. Chaput, A.B., M.D.
Rowell C. Cloninger, A.B., M.D.
Charles E. Cottel, B.S., M.D.
R. Adams Cowley, M.D.
Patricia Dodd, B.S., M.D.
Miles E. Drake, Ph.D., M.D.
William C. Ebeling, III, B.S., M.D.
Thomas G. Elias, A.B., M.D.
Otto R. Emig, B.S., M.D.

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[1] Acting Resident since May 11, 1945.
[2] 10/1/44 to 5/31/45—Left to enter Army.
[3] Acting Resident since May 1, 1945.
[4] 10/1/44 to 5/10/45.
[5] 10/1/44 to 5/4/45.

Russell L. Fankhouser, A.B., M.D.
Wilbur H. Foard, M.D.
Perry Futterman, A.B., M.D.
Donald F. Gleason, A.B., M.D.
Marvin Goldstein, A.B., M.D.
Ernest G. Guy, B.S., M.D.
Henry W. Holljes, A.B., M.D.
Helen A. Horn, A.B., M.D.
John M. Jernigan, Jr., B.S., M.D.
Donald W. Mintzer, B.S., M.D.
William H. Mosberg, Jr., B.S., M.D.
Richard B. Norment, III, B.S., M.D.
George M. Simons, B.S., M.D.
Millard T. Traband, Jr., B.S., M.D.

ANNOUNCEMENT OF UNIVERSITY HOSPITAL RESIDENT AND INTERN STAFF

July 1, 1945 to March 31, 1946

RESIDENT STAFF

Donald J. Barnett, Asso.Sc., M.D., *Assistant in Roentgenology.*
Alma C. Braun-Kelly, B.S., M.D., *Resident in Obstetrics.*
Rowell C. Cloninger, A.B., M.D., *Assistant Resident in Surgery.*
R. Adams Cowley, M.D., *Assistant Resident in Surgery.*
Miles E. Drake, Ph.D., M.D., *Assistant Resident in Pediatrics.*
William C. Ebeling, III, B.S., M.D., *Assistant Resident in Medicine.*
Ernest G. Guy, B.S., M.D., *Assistant Resident in Medicine.*
John S. Haught, A.B., M.D., *Resident in Gynecology.*
James W. Hendrick, M.D., *Assistant Resident in Surgery.*
Alvin H. Honigman, B.S., M.D., *Resident in Medicine.*
Charles H. Ingram, A.B., M.D., *Assistant Resident in Surgery.*
A. Robert Marks, A.B., M.D., *Resident in Pediatrics.*
John S. Martin, B.S., M.S., B.M., M.D., *Assistant Resident in Gynecology.*
William H. Mosberg, Jr., B.S., M.D., *Assistant Resident in Surgery.*
Richard B. Norment, III, B.S., M.D., *Assistant Resident in Obstetrics.*
John O. Robben, M.D., *Assistant Resident in Surgery.*
E. Roderick Shipley, A.B., M.D., *Resident in Surgery.*
George M. Simons, B.S., M.D., *Assistant Resident in Obstetrics.*
Edwin H. Stewart, Jr., M.D., *Assistant Resident in Surgery.*
F. X. Paul Tinker, B.S., M.D., *Assistant Resident in Gynecology.*
Hugh D. Vazzana, M.D., *Assistant Resident in Roentgenology.*

INTERNS

George H. Anderson, B.S., M.D.
Joseph W. Baggett, A.B., MD.
Thomas G. Barnes, A.B., M.D.
Reece R. Boone, Jr., A.B., B.S., M.D.
Douglas E. Bradshaw, A.B., M.D.
Charles S. Butler, B.S., M.D.
George R. Callender, Jr., B.S., M.D.
Mary D. Clark, A.B., M.D.
Eugene H. Conner, M.D.
Sallie Cook, A.B., M.D.
John M. Dennis, B.S., M.D.
John P. Doenges, A.B., M.D.
Joseph B. Ganey, A.B., M.D.
William A. Holbrook, B.S., M.D.
Richard D. Hoover, B.S., M.D.
Melvin A. Johnson, M.D.
Leonard T. Kurland, A.B., M.D.
Luther M. Mace, B.S., M.D.
James R. McNinch, Jr., A.B., M.D.
Roy H. Ott, Jr., A.B., M.D.
S. Malone Parham, A.B., M.D.
William H. Robinson, M.D.
Wilbur M. Scott, B.S., M.D.
Richard G. Skinner, Jr., B.S., M.D.
Osmund A. Wisness, A.B., M.D.

UNIVERSITY HOSPITAL DISPENSARY STAFF

Emma Winship, R.N.
Dispensary Director

DISPENSARY COMMITTEE

John E. Legge, *Chairman*
Emma Winship, R.N., *Secretary*

Louis H. Douglass
J. Mason Hundley, Jr.
C. Loring Joslin
★John E. Savage
★George H. Yeager
Ralph P. Truitt

Chief of Medical Clinic	John E. Legge
Assistant Chiefs of Medical Clinic	★Lewis P. Gundry ★Irving Freeman Kurt Levy Samuel Legum
Physicians	M. A. Fine Charles R. Goldsborough Meyer W. Jacobson ★M. Paul Byerly ★Samuel J. Hankin H. Edmund Levin Thomas P. Sprunt G. Carroll Lockard Milton S. Sacks Leslie Harrell Pierce
Chief of Gastro-Enterology Clinic	Zachariah Morgan
Assistant Chiefs of Gastro-Enterology Clinic	★Francis G. Dickey Z. Vance Hooper
Assistant Gastro-Enterologists	★Samuel Morrison Albert J. Shochat ★Charles V. Sevcik Alfred S. Lederman
Chief of Neurology Clinic	Leon Freedom
Assistant Neurologists	Benjamin Pushkin ★William L. Fearing ★Harry A. Teitelbaum
Chief of Psychiatric Clinic	Ralph P. Truitt
Assistant Psychiatrists	★H. W. Newell ★Harry Goldsmith Alice J. Rockwell ★Joseph Marshall ★H. Robert Blank Hans W. Loewald ★Sidney Berman Mabel Wilkins †Kathryn L. Schultz

Chief of Chest Clinic	E. H. Tonolla
Assistants, Diseases of the Lungs	★Manuel Levin Meyer W. Jacobson ★Joseph E. Muse, Jr.
Chief of Metabolism Clinic	★Lewis P. Gundry
Assistants in Metabolism Clinic	★William G. Helfrich ★Walter E. Karfgin ★A. Goldman Louis V. Blum W. Grafton Hersperger
Chief of Cardiovascular Clinic	★William S. Love, Jr.
Acting Chief of Cardiovascular Clinic	C. Edward Leach
Assistant Chief of Cardiovascular Clinic	★Robert B. Mitchell, Jr
Assistant Cardiologists	★Samuel J. Hankin ★Irving Freeman ★Harry M. Robinson, Jr. ★Ephraim T. Lisansky F. Frederick Ruzicka ★H. F. Ermshar †Wilfred H. Townshend
Chief of Allergy Clinic	H. M. Bubert
Assistant Chief of Allergy Clinic	★Edward S. Kallins
Assistant Allergists	Samuel Snyder Frank V. Manieri ★S.Edwin Muller
Allergy Clinic Technician	Betty Gershenson
Director, Pediatric Clinic	A. H. Finkelstein
Chief of Pediatric Clinic	Samuel S. Glick
Assistant Pediatricians	★M. Paul Byerly ★Israel P. Meranski William M. Seabold ★Jerome Fineman Albert Jaffe ★Lauriston L. Keown ★Joseph R. Meyerowitz ★Gibson J. Wells ★Robert J. Gore Louis V. Blum ★Earle S. Scott Arnold F. Lavenstein ★William E. Weeks ★Thomas A. Hedrick ★J. Carlton Wich A. Robert Marks

Chief of Surgical Clinic	★George H. Yeager
Assistant Surgeons	Thurston R. Adams Luther E. Little ★George H. Brouillet W. R. Johnson ★Samuel E. Proctor ★Clarence P. Scarborough William B. Settle
Chief of Orthopaedic Surgery Clinic	Allen Fiske Voshell
Assistant Orthopaedic Surgeons	John V. Hopkins Moses Gellman ★Henry F. Ullrich George S. Appleby Milton J. Wilder
Chief of Genito-Urinary Clinic	W. Houston Toulson
Assistant Genito-Urinary Surgeons	W. A. H. Councill John F. Hogan Lyle J. Millan ★Harry S. Shelley ★Howard B. Mays
Chief of Dermatology Clinic	Harry M. Robinson, Sr.
Assistant Dermatologists	Rollin C. Hudson ★Harry M. Robinson, Jr. ★Lester N. Kolman ★Mark Hollander ★Benjamin Highstein ★Solomon Tanenbaum
Chief of Rhinology and Laryngology Clinic	Benjamin S. Rich
Assistant Rhinologists and Laryngologists	§Joseph Nurkin Cleo D. Stiles Thomas R. O'Rourk M. Baylus Frederick T. Kyper Samuel L. Fox
Chief of Proctology Clinic	★Monte Edwards
Assistant Proctologist	Thurston R. Adams
Chief of Gynecology Clinic	J. Mason Hundley, Jr.
Assistant Chief of Gynecology Clinic	Beverley C. Compton

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§ Died.

Assistant Gynecologists	Thomas S. Bowyer John C. Dumler John T. Hibbitts ★Ernest I. Cornbrooks, Jr. William B. Settle ★Kenneth B. Boyd
Assistant Gynecologists	W. Allen Deckert ★Everett S. Diggs Helen I. Maginnis William K. Diehl †John S. Haught
Female Cystoscopists	J. Mason Hundley, Jr. Beverley C. Compton William K. Diehl
Chief of Oral Surgery Clinic	★Brice M. Dorsey
Oral Surgeons	Harold Goldstein ★Samuel H. Bryant
Chief of Obstetrical Clinic	★John E. Savage
Assistant Chief of Obstetrical Clinic	D. Frank Kaltreider
Assistant Obstetricians	Margaret B. Ballard Dudley P. Bowe Maxwell L. Mazer Jaroslav Hulla W. Allen Deckert ‡★Joseph M. Blumberg Hugh B. McNally Ferd E. Kadan ★Jacob R. Jensen J. Edward Norris ★J. Warren Albrittain D. McClelland Dixon ★W. Kenneth Mansfield, Jr. Daniel I. Dann Thomas S. Bowyer ★L. Calvin Gareis †Oscar Hartman †Melvin D. Kappelman †Jones B. Ballina †William A. Mitchell
Oncology Clinic, Gynecological Division	J. Mason Hundley, Jr. Beverley C. Compton John C. Dumler William K. Diehl

Oncology Clinic, Surgical Division	Grant E. Ward E. Eugene Covington J. Duer Moores ★Murray M. Copeland ★Arthur G. Siwinski William K. Diehl
Chief of Ophthalmology Clinic	Henry F. Graff
Assistant Ophthalmologists	★Frank A. Holden Milton C. Lang Jerome Snyder
Directress, Occupational Therapy	Miss Frances F. Lewis
Directress, Social Service	Miss Mary Fitzpatrick

UNIVERSITY HOSPITAL DISPENSARY REPORT

July 1, 1943–June 30, 1944

Departments	*New Cases*	*Old Cases*	*Total*
Allergy	73	1,821	1,894
Cardiology	131	1,193	1,324
Curative Workshop	114	1,655	1,769
Cystoscopy	76	428	504
Dermatology	3,505	9,446	12,951
Diabetic	61	746	807
Ear & Nose & Throat	977	1,075	2,052
Eye	1,018	3,273	4,291
Gastro-Intestinal	169	975	1,144
Genito-Urinary	248	619	867
Gynecology	1,405	4,237	5,642
Hematology	2	186	188
Medicine	1,080	2,587	3,667
Neurology	119	504	623
Obstetrics	1,664	11,615	13,279
Oncology	174	1,047	1,221
Oral Surgery	16	19	35
Orthopedic	985	2,353	3,338
Pediatrics	1,647	6,671	8,318
Physiotherapy	225	2,023	2,248
Plastic Surgery	29	50	79
Proctology	116	148	264
Psychiatry	157	236	393
Surgery	2,102	5,976	8,078
Tuberculosis	143	506	649
Total	16,236	59,389	75,625

MERCY HOSPITAL

BOARD OF GOVERNORS

★Walter D. Wise, *Chairman*

Sister M. Veronica
Sister M. Celeste
Sister M. Mildred
Sister M. Philip
Sister M. Vincent
Sister M. Beatrice

Henry F. Bongardt
H. Raymond Peters
★Maurice C. Pincoffs
Waitman F. Zinn
Thomas K. Galvin
Edward P. Smith
Elliott H. Hutchins

MERCY HOSPITAL STAFF

Surgeon-in-Chief	★Walter D. Wise
Acting Surgeon-in-Chief	Elliott H. Hutchins
Surgeons	Charles F. Blake F. L. Jennings R. W. Locher Thomas R. Chambers Elliott H. Hutchins ★D. J. Pessagno William F. Rienhoff N. Clyde Marvel Henry F. Bongardt
Neurological Surgeons	†Charles Bagley, Jr. †Richard B. Coblentz †James D. Arnold, Jr.
Associate Surgeons	I. O. Ridgely James W. Nelson Howard B. McElwain Simon H. Brager John A. O'Connor Thomas B. Aycock Charles W. Maxson ★I. Ridgeway Trimble ★Richard T. Shackelford Raymond F. Helfrich
Assistant Surgeons	★Julius Goodman E. Eugene Covington S. Demarco, Jr. T. J. Touhey William N. McFaul, Jr. ★Meyer H. Zuravin ★Howard L. Zupnik ★Daniel R. Robinson ★Joseph V. Jerardi Wm. C. Dunnigan Harold H. Burns ★F. Ford Loker

Consulting Ophthalmologist and Otologist	Harry Friedenwald
Ophthalmologists and Otologists	H. K. Fleck M. Raskin
Associate Ophthalmologists and Otologists	Joseph I. Kemler F. A. Pacienza
Assistant Ophthalmologist and Otologist	★Joseph V. Jeppi
Consulting Rhinologists and Laryngologists	W. Raymond McKenzie George W. Mitchell
Rhinologist and Laryngologist	Waitman F. Zinn
Associate Rhinologists and Laryngologists	Fayne A. Kayser Benjamin S. Rich ★Theodore A. Schwartz ★Birkhead Macgowan
Assistant Rhinologist and Laryngologist	★Joseph V. Jeppi
Bronchoscopist	Waitman F. Zinn
Associate Bronchoscopist	Fayne A. Kayser
Assistant Bronchoscopist	★Theodore A. Schwartz
Proctologist	Charles F. Blake
Orthopaedic Surgeon	Albertus Cotton
Associate Orthopaedic Surgeon	H. L. Rogers
Assistant Orthopaedic Surgeons	I. H. Maseritz ★J. H. Gaskell
Urologist	Kenneth D. Legge
Associate Urologists	Leon K. Fargo Francis W. Gillis
Dermatologists	Francis A. Ellis ★William D. Wolfe
Dentist	★J. D. Fusco
Assistant Dentists	J. J. Foley ★B. Wallace Inman Stuart Buppert
Consulting Physician	★Maurice C. Pincoffs
Physician-in-Chief	H. Raymond Peters
Physicians	Harvey G. Beck Thomas P. Sprunt George McLean J. Sheldon Eastland ★Louis A. M. Krause

Associate Physicians	Hubert C. Knapp Bartus T. Baggott Thomas C. Wolff Wetherbee Fort John E. Legge T. Nelson Carey Sol Smith Hugh J. Welch
Assistant Physicians	S. A. Tumminello J. Howard Burns Earl L. Chambers K. W. Golley ★William H. Kammer, Jr. ★Donald J. Roop ★S. Edwin Muller ★William C. Lowe †John R. Davis, Jr. ★†J. Emmett Queen
Associate Gastro-Enterologists	T. Frederick Leitz Theodore H. Morrison
Assistant Gastro-Enterologists	Maurice Feldman Joseph Sindler
Pediatricians	Edgar B. Friedenwald Frederick B. Smith
Associate Pediatrician	G. Bowers Mansdorfer
Assistant Pediatricians	William J. Schmitz William M. Seabold ★Jerome Fineman
Neurologist and Psychiatrist	Andrew C. Gillis
Associate Neurologists and Psychiatrists	★Harry Goldsmith Philip F. Lerner
Obstetrician-in-Chief	Edward P. Smith
Obstetricians	J. J. Erwin Thomas K. Galvin William S. Gardner ★Frank K. Morris Ernest S. Edlow
Associate Obstetrician	★Charles H. Doeller, Jr.
Assistant Obstetricians	J. Howard Burns William C. Duffy †Joseph C. Sheehan †Robert B. Tunney
Consulting Gynecologist	William S. Gardner
Gynecologist-in-Chief	Thomas K. Galvin

Gynecologists	Edward P. Smith George A. Strauss, Jr. J. J. Erwin
Associate Gynecologists	★Frank K. Morris Ernest S. Edlow
Assistant Gynecologists	★H. L. Granoff ★Charles H. Doeller, Jr. William C. Duffy †Joseph C. Sheehan William J. Rysanek, Jr.
Pathologists	★Walter C. Merkel Hugh R. Spencer C. Gardner Warner
Clinical Pathologists	H. T. Collenberg H. Raymond Peters Charles E. Bramble
Technicians	Sister Paula Marie Eleanor Behr Charlotte Schwalm Elizabeth Johnson Lillian Lawler Mary Gertrude Garvey Mrs. Raymond Tuebner
Radiologist	Albertus Cotton
Associate Radiologist	Harry L. Rogers
Assistant Radiologists	★A. D. Young †E. Eugene Covington ‡William Greenfeld
Technicians	Sister M. Kevin Charlotte Clopter Henrietta McCaffery

ANNUAL HOSPITAL APPOINTMENTS

The following annual appointments are made to the Mercy Hospital:

Five Residents in Surgery
Three Residents in Medicine
Resident in Rhinology
Two Residents in Gynecology
Twelve Interns on Rotating Service

MERCY HOSPITAL RESIDENT AND INTERN STAFF

OCTOBER 1, 1944–JUNE 30, 1945

RESIDENT STAFF

Patrick C. Phelan, Jr., A.B., M.D., *Resident Surgeon.*
Robert Z. Berry, A.B., M.D., *Associate Resident Surgeon.*
Elmer E. Cook, Jr., B.S., M.D., *Assistant Resident Surgeon.*
Paul R. Ziegler, B.S., M.D., *Assistant Resident Surgeon.*
J. Emmett Queen, A.B., M.D., *Resident Physician.*
J. Roy Guyther, A.B., M.D., *Assistant Resident Physician.*
M. Jane Foley, A.B., M.D., *Assistant Resident Physician.*
Toney R. Giglia, B.S., M.D., *Resident Obstetrician and Gynecologist.*
Robert B. Tunney, A.B., M.D., *Resident Obstetrician and Gynecologist.*
Francis E. Hornbrook, B.S., M.D., *Assistant Resident in Gynecology and Obstetrics.*

INTERNS

Houston L. Bell, B.S., M.D.
Charles F. Hobelmann, A.B., M.D.
Charles F. O'Donnell, M.D.
William W. Osborne, M.D.
John M. Palese, B.S., M.D.
Carl N. Patterson, B.S., M.D.
Edwin L. Pierpont, B.S., M.D.
Harry F. Rolfes, B.S., M.D.
Walter K. Spelsberg, B.S., M.D.
Francis X. P. Tinker, B.S., M.D.
Roy B. Turner, Jr., B.S., M.D.
John F. Ullsperger, A.B., M.D.

ANNOUNCEMENT OF

MERCY HOSPITAL RESIDENT AND INTERN STAFF

JULY 1, 1945–MARCH 31, 1946

RESIDENT STAFF

Paul R. Ziegler, B.S., M.D., *Associate Resident Surgeon.*
Charles P. O'Donnell, M.D., *Assistant Resident Surgeon.*
Joseph R. Guyther, A.B., M.D., *Resident Physician.*
Harry F. Rolfes, B.S., M.D., *Assistant Resident Physician.*
Francis E. Hornbrook, B.S., M.D., *Resident Obstetrician and Gynecologist.*
Walter R. Spelsberg, B.S., M.D., *Assistant Resident in Obstetrics and Gynecology.*
William W. Osborne, M.D., *Assistant Resident in Obstetrics and Gynecology.*
Carl N. Patterson, B.S., M.D., *Resident on Nose & Throat.*

INTERNS

Claude F. Bailey, A.B., M.D.
David F. Bell, Jr., B.S., M.D.
William K. Brendle, B.S., M.D.
Harry W. Camp, Jr., A.B., M.D.
Vincent dePaul Fitzpatrick, Jr., A.B., M.D.
John A. Hedrick, M.D.
Alexander P. Kelly, Jr., M.D.
Charles M. Linthicum, B.S., M.D.
Paul R. Myers, A.B., M.D.
Joseph E. Reahl, A.B., M.D.
Hilarion Sanchez, Jr., M.D.
Anthony F. A. Stedem, Jr., A.B., M.D.
Charles Strahan, Jr., B.S., M.D.

MERCY HOSPITAL DISPENSARY STAFF

Sister M. Agnesine, B.S., R.N.	*Dispensary Director*
Supervisor of Surgical Clinic	Raymond F. Helfrich
Assistant Supervisor of Surgical Clinic	Harold H. Burns
Assistant Surgeons	I. O. Ridgely H. F. Bongardt James W. Nelson ★I. Ridgeway Trimble Simon H. Brager S. DeMarco, Jr. E. Eugene Covington ★Richard T. Shackelford ★Meyer H. Zuravin ★Howard L. Zupnik ★Daniel R. Robinson ★Joseph V. Jerardi ★Raymond J. Lipin ★William M. Garlick
Supervisor of Genito-Urinary Clinic	Kenneth D. Legge
Assistant Genito-Urinary Surgeons	L. K. Fargo Francis W. Gillis
Orthopaedic Surgeons	Albertus Cotton Harry L. Rogers I. H. Maseritz ★Jason H. Gaskell
Supervisors of Medical Clinic	H. Raymond Peters ★Maurice C. Pincoffs
Chief of Medical Clinic	Sol Smith
Assistant Physicians	★Milton Stein Louis F. Klimes ★Irving Freeman Nathaniel M. Beck ★S. Edwin Muller ★William C. Lowe John R. Davis ★†William H. Kammer ★†J. Emmett Queen

Chief of Cardiovascular Clinic	Thomas C. Wolff
Assistant Cardiologist	Leon Ashman
Chief of Metabolism Clinic	J. Sheldon Eastland
Assistant in Metabolism Clinic	Louis F. Klimes
Gastro-Enterologist	Maurice Feldman
Chief of Pediatric Clinic	Edgar B. Friedenwald
Pediatricians	G. Bowers Mansdorfer ★Jerome Fineman George Bayley John W. Machen
Supervisor of Neurological and Psychiatric Clinic	Andrew C. Gillis
Neurologists and Psychiatrists	★Harry Goldsmith Philip F. Lerner George C. Medairy
Supervisor of Dermatology Clinic	Francis A. Ellis
Dermatologist	★William D. Wolfe
Oncologist	James W. Nelson
Chief of Gynecology Clinic	Thomas K. Galvin
Gynecologists	Edward P. Smith J. J. Erwin ★Frank A. Morris George A. Strauss, Jr. Ernest S. Edlow ★H. L. Granoff ★Charles H. Doeller, Jr. William C. Duffy †Joseph C. Sheehan William J. Rysanek †Robert B. Tunney
Chief of Obstetrical Clinic	Edward P. Smith
Obstetricians	★William A. Dodd ★Harry McBrine Beck ★Charles H. Doeller, Jr. J. Howard Burns William C. Duffy
Esophagoscopist	Waitman F. Zinn
Associate Esophagoscopist	Fayne A. Kayser
Rhinologists and Laryngologists	Waitman F. Zinn Benjamin S. Rich ★Theodore A. Schwartz Samuel L. Fox

Ophthalmologists and Otologists	M. Raskin F. A. Pacienza ★Joseph V. Jeppi F. Edwin Knowles, Jr.
Supervisor of Proctology Clinic	Charles F. Blake
Proctologists	E. Eugene Covington Simon H. Brager
Supervisor of Dental Clinic	Conrad L. Inman
Dentists	★J. D. Fusco ★B. Wallace Inman Stuart Buppert
Supervisor of Physiotherapy Clinic	Leon Hannan
Assistant Physiotherapist	Alice R. Hannan
Social Worker	
Secretaries	Eleanor Arnick Eva Applegarth

MERCY HOSPITAL DISPENSARY REPORT

Year of 1944

Department	*New Cases*	*Old Cases*	*Total*
Bronchoscopic	304	671	975
Cardiology	8	162	170
Dental	4	3	7
Dermatology	134	321	455
Diabetic	5	326	331
Gastro-Intestinal	23	107	130
Genito-Urinary	93	1,135	1,228
Gynecology	308	1,231	1,539
Medicine	568	2,454	3,022
Neurology	67	418	485
Ophthalmology	142	471	613
Orthopedics	94	422	516
Pediatrics	208	744	952
Physiotherapy	133	1,179	1,312
Postnatal	209	243	452
Prenatal	328	2,283	2,611
Rhinolaryngology	254	668	922
Surgery	549	2,938	3,487
Surgical Follow-Up	151	602	753
Well Baby Clinic	85	72	157
Totals	3,667	16,450	20,117

THE BALTIMORE CITY HOSPITALS

STAFF, 1945–1946

PARKER J. MCMILLIN, *Superintendent*

Consulting Chief Surgeon	ARTHUR M. SHIPLEY, M.D., D.Sc.
Surgeon-in-Chief	THOMAS B. AYCOCK, B.S., M.D.
Physician-in-Chief	★JOHN T. KING, JR., A.B., M.D.
Physician-in-Chief	C. HOLMES BOYD, M.D.
[1]*Physician-in-Chief, Radiology*	FREDERICK B. MANDEVILLE, M.D.
Physician-in-Chief, Tuberculosis Hospital	★H. VERNON LANGELUTTIG, M.D.
Physician-in-Chief, Tuberculosis Hospital	LAWRENCE M. SERRA, M.D.
Physician-in-Chief, Psychopathic Hospital	ESTHER L. RICHARDS, M.D.
Obstetrician-in-Chief	LOUIS H. DOUGLASS, M.D.
Pediatrician-in-Chief	★T. CAMPBELL GOODWIN, A.B., M.D.
Pediatrician-in-Chief	HUGH W. JOSEPHS, M.D.
[1]*Pathologist-in-Chief*	
Dental Surgeon-in-Chief	LOWELL P. HENNEBERGER, D.D.S.
Assistant Surgeon-in-Chief	OTTO C. BRANTIGAN, M.D.
Visiting Surgeons	JAMES C. OWINGS, M.D. ★HARRY C. HULL, M.D. HENRY N. HARKINS, M.D. THURSTON R. ADAMS, M.D.
Consultant in Traumatic Surgery	CHARLES A. REIFSCHNEIDER, M.D.
Consultants in General Surgery	F. C. LEE, M.D. ★I. RIDGEWAY TRIMBLE, M.D. SAMUEL MCLANAHAN, JR., A.B., M.D.
Consultant in Peripheral Vascular Diseases	★GEORGE H. YEAGER, B.S., M.D.
Consultants in Plastic Surgery	EDWARD A. KITLOWSKI, M.D. EDWARD M. HANRAHAN, JR., M.D.
Assistant Visiting Surgeon	LUTHER E. LITTLE, M.D.
Assistant Visiting Physician, Tuberculosis	WILLIAM H. GRENZER, M.D.
Assistant Visiting Psychiatrist	THOMAS A. C. RENNIE, M.D.
Visiting Obstetrician	J. MORRIS REESE, M.D.
Assistant Visiting Obstetricians	JOHN M. HAWS, B.S., M.D. MARIUS P. JOHNSON, A.B., M.D. ★JOHN E. SAVAGE, B.S., M.D. HUGH B. MCNALLY, B.S., M.D.

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[1] Appointment pending.

Visiting Pediatricians	★William Dorman, M.D. ★William B. Stifler, M.D. ★B. Matthew DeBuskey, M.D.
Assistant Visiting Pediatrician	William M. Seabold, A.B., M.D.
Visiting Gynecologist	J. Mason Hundley, Jr., M.A., M.D.
Assistant Visiting Gynecologists	Beverley Compton, M.D. John C. Dumler, B.S., M.D. John T. Hibbitts, M.D. ★Ernest I. Cornbrooks, Jr., M.D. William K. Diehl, M.D.
Assistant Chief Physician	Howard K. Rathbun, M.D.
Visiting Physicians	★John W. Parsons, M.D. ★Louis A. M. Krause, M.D. Harry F. Klinefelter, Jr., M.D. Charles C. W. Judd, M.D.
Assistant Visiting Physician	Thurston Harrison, M.D.
Visiting Cardiologist	
Visiting Ophthalmologist	Frank B. Walsh, M.D.
Visiting Orthopedic Surgeons	Allen F. Voshell, A.B., M.D. ★Henry F. Ullrich, M.D., D.Sc.
Assistant Visiting Orthopedic Surgeon	Milton J. Wilder, M.D.
Visiting Laryngologists	Thomas R. O'Rourke, M.D. ★John Bordley, M.D.
Assistant Visiting Laryngologists	Donald F. Proctor, M.D. Frederick T. Kyper, M.D.
Visiting Urologist	W. Houston Toulson, M.Sc., M.D.
Assistant Visiting Urologists	Hugh Jewett, M.D. ★Howard B. Mays, M.D.
Visiting Neurological Surgeons	Charles Bagley, Jr., M.A., M.D. Richard G. Coblentz, M.A., M.D.
Assistant Visiting Neurological Surgeon	James G. Arnold, Jr., M.D.
Visiting Neurologists	Frank R. Ford, M.D. O. R. Langworthy, M.D.
Assistant Visiting Neurologists	★Harry A. Teitelbaum, M.D. Luis Ortega, M.D.
Visiting Proctologist	★Monte Edwards, M.D.
Visiting Oncologists	Grant E. Ward, A.B., M.D. ★Murray M. Copeland, M.D.
Assistant Visiting Otologist	J. J. Belemer, M.D.
Visiting Dermatologist	Isaac R. Pels, M.D.
Visiting Dental Surgeon	H. Glenn Waring, D.D.S.
Assistant Visiting Dental Surgeons	L. W. Bimestefer, D.D.S. ★Joseph B. Berke, D.D.S. ★B. W. Miksinski, D.D.S.

THE JAMES LAWRENCE KERNAN HOSPITAL AND INDUSTRIAL SCHOOL OF MARYLAND FOR CRIPPLED CHILDREN

STAFF, 1945–1946

Surgeon-in-Chief and Medical Director	Allen Fiske Voshell, A.B., M.D.
Attending Orthopaedic Surgeon and Roentgenologist	Albertus Cotton, A.M., M.D.
Associate Orthopaedic Surgeons	Moses Gellman, B.S., M.D. Harry Rogers, M.D. Winthrop M. Phelps, A.B., M.D.
Assistant Orthopaedic Surgeon	Milton J. Wilder, M.D.
Plastic Surgeon	Edward A. Kitlowski, A.B., M.D.
Aurist and Laryngologist	Benjamin S. Rich, A.B., M.D.
Dentist	M. E. Coberth, D.D.S.
Pediatrist	Helen M. Taussig, M.D.
Consulting Surgeons	Arthur M. Shipley, M.D., Sc.D. Charles Reid Edwards, A.B., M.D. Thomas B. Aycock, B.S., M.D.
Consulting Aurist and Laryngologist	Franklin B. Anderson, M.D. Edward A. Looper, M.D., D.Oph.
Consulting Neurological Surgeon	Charles Bagley, Jr., M.A., M.D.
Consulting Plastic Surgeon	John Staige Davis, B.Sc., M.D.
Consulting Physician	Thomas R. Brown, A.B., M.D
Consulting Dermatologists	Harry M. Robinson, Sr., M.D. Leon Ginsberg, M.D.
Consulting Neurologists	Irving J. Spear, M.D. R. V. Seliger, M.D.
Consulting Pediatrist	Benjamin Tappan, A.B., M.D.
Consulting Dentist	Harry B. McCarthy, D.D.S.
Consulting Opthalmologists	Harry Friedenwald, A.B., M.D., D.H.L., D.Sc. William Tarun, M.D.
Consulting Pathologist	Hugh R. Spencer, M.D.
Consulting Roentgenologist	Henry J. Walton, M.D.
Resident Orthopaedic Surgeon	George S. Appleby, M.D.
Superintendent	Miss Maud M. Gardner, R.N.
Dispensary and Social Service Nurse	Mrs. Evelyn Byrd Zapf, R.N.
Physical Therapists and X-ray Technician	★Miss Jane Ewing, P.T., Reg. Mrs. Georgiana Wisong
Occupational Therapist	Miss Muriel Zimmerman, O.T.
Instructor in Grammar School	Miss Bertha Sendelback

HISTORY OF THE SCHOOL OF MEDICINE

The present School of Medicine, with the title University of Maryland School of Medicine and College of Physicians and Surgeons, is the result of a consolidation and merger of the University of Maryland School of Medicine with the Baltimore Medical College (1913) and the College of Physicians and Surgeons of Baltimore (1915).

Through the merger with the Baltimore Medical College, an institution of thirty-two years' growth, the facilities of the School of Medicine were enlarged in faculty, equipment and hospital connection.

The College of Physicians and Surgeons was incorporated in 1872, and established on Hanover Street in a building afterward known as the *Maternité*, the first obstetrical hospital in Maryland. In 1878 union was effected with the Washington University School of Medicine, in existence since 1827, and the college was removed to Calvert and Saratoga Streets. Through the consolidation with the College of Physicians and Surgeons, medical control of the teaching beds in the Mercy Hospital was obtained.

The School of Medicine of the University of Maryland is one of the oldest foundations for medical education in America, ranking fifth in point of age among the medical colleges of the United States. It was organized in 1807, and chartered in 1808, under the name of the College of Medicine of Maryland, and its first class was graduated in 1810. In 1812 the College was empowered by the Legislature to annex three other colleges or faculties: Divinity, Law, and Arts and Sciences; and the four colleges thus united were "constituted an University by the name and under the title of the University of Maryland."

The original building of the Medical School at the N. E. corner of Lombard and Greene Streets, was erected in 1812. It is the oldest structure in this country from which the degree of doctor of medicine has been granted annually since its erection. In this building were founded one of the first medical libraries and one of the first medical school libraries in the United States.

At this Medical School dissection was made a compulsory part of the curriculum, and independent chairs for the teaching of gynecology and pediatrics (1867), and of ophthalmology and otology (1873), were installed for the first time in America.

This School of Medicine was one of the first to provide for adequate clinical instruction by the erection of its own hospital in 1823. In this hospital intramural residency for senior students was established for the first time.

BUILDINGS AND FACILITIES

The original medical building at the N. E. corner of Lombard and Greene Streets houses the Office of the Dean, Office of the Assistant Dean and two lecture halls.

The Administration Building, to the east of the original building, contains the Baltimore offices of the Registrar and the Director of Admissions and two lecture halls.

The laboratory building at 31 South Greene Street is occupied by the departments of Pathology, Bacteriology and Biochemistry.

The Frank C. Bressler Research Laboratory provides the departments of Anatomy, Histology and Embryology, Pharmacology, Physiology and Clinical Pathology with facilities for teaching and research. It also houses the research laboratories of the clinical departments, animal quarters, a laboratory for teaching Operative Surgery, a lecture hall and the Bressler Memorial Room.

This building was erected in 1939–1940 at 29 South Greene Street opposite the University Hospital. It was built with funds left to the School of Medicine by the late Frank C. Bressler, an alumnus, supplemented by a grant from the Federal government. The structure, in the shape of an I, extends east from Greene Street, just north of the original building.

MEDICAL LIBRARY

CARL W. HINTZ, A.B., A.B.L.S., A.M.L.S.	*Director of Libraries*

IDA MARIAN ROBINSON, A.B., B.S.L.S.	*Librarian*
RUTH LEE BRISCOE	*Assistant Librarian*
JULIA E. WILSON, B.S., B.S.L.S.	*Assistant Librarian*
EDITH R. McINTOSH, A.M., A.B.L.S.	*Cataloguer*
[1]——————	*Assistant to the Cataloguer*

The Medical Library of the University of Maryland, founded in 1813 by the purchase of the collection of Dr. John Crawford, now numbers 23,500 volumes and several thousand pamphlets and reprints. Over three hundred of the leading medical journals, both foreign and domestic, are received regularly. The library is housed in Davidge Hall, a comfortable and commodious building in close proximity to classrooms and laboratories, and is open daily for the use of members of the faculty, the student body and the profession generally. Libraries pertaining to particular phases of medicine are maintained by several departments of the medical school.

The library of the Medical and Chirurgical Faculty of Maryland and the Welch Medical Library are open to students of the medical school without charge. Other libraries of Baltimore are the Peabody Library and the Enoch Pratt Free Library.

DISPENSARY BUILDING

The old hospital building has been remodeled and is occupied by the Out-patient Department. Thus the students have been provided with a splendidly appointed group of clinics for their training in out-patient work. All departments of clinical training are represented in this remodeled building and all changes have been predicated on the teaching function for which this department is intended.

The office of the Medical School Physician is located in this building.

The Department of Art also occupies quarters here.

UNIVERSITY HOSPITAL

The University Hospital, which is the property of the University of Maryland, is the oldest institution for the care of the sick in the state of Maryland. It was opened in September 1823, under the name of the Baltimore Infirmary, and at that time consisted of but four wards, one of which was reserved for patients with diseases of the eye.

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[1] To be appointed.

In 1933–1934 the new University Hospital was erected, and patients were admitted to this building in November 1934. The new hospital is situated at the southwest corner of Redwood and Greene Streets, and is consequently opposite the medical school buildings. The students, therefore, are in close proximity and little time is lost in passing from the lecture halls and laboratories to the clinical facilities of the new building.

This new building, with its modern planning, makes a particularly attractive teaching hospital and is a very valuable addition to the clinical facilities of the medical school.

The new hospital has a capacity of 435 beds and 65 bassinets devoted to general medicine, surgery, obstetrics, pediatrics, and the various medical and surgical specialties.

The teaching zone extends from the second to the eighth floor and comprises wards for surgery, medicine, obstetrics, pediatrics, and a large clinical lecture hall. There are approximately 270 beds available for teaching.

The space of the whole north wing of the second floor is occupied by the department of roentgenology. The east wing houses clinical pathology and special laboratories for clinical microscopy, biochemistry, bacteriology, and an especially well appointed laboratory for students' training. The south wing provides space for electro-cardiographic and basal metabolism departments, with new and very attractive air-conditioned or oxygen therapy cubicles. The west wing contains the departments of rhinolaryngology and bronchoscopy, industrial surgery, ophthalmology, and male and female cystoscopy.

The third and fourth floors each provide two medical and two surgical wards. The fifth floor contains two wards for pediatrics, and on the sixth floor there are two wards for obstetrics. Each ward occupies the space of one wing of the hospital.

On the seventh floor is the general operating suite, the delivery suite, and the central supply station. The eighth floor is essentially a students' floor and affords a mezzanine over the operating and delivery suites, and a students' entrance to the clinical lecture hall.

In the basement there is a very well appointed pathological department with a large teaching autopsy room and its adjunct service of instruction of students in pathological anatomy.

The hospital receives a large number of accident patients because of its proximity to the largest manufacturing and shipping districts of the city.

The obstetrical service is particularly well arranged and provides accommodation for forty ward patients. This service, combined with an extensive home service, assures the student abundant obstetrical training.

During the year ending December 31, 1943, 2206 cases were delivered in the hospital and 910 cases in the outdoor department. Students in the graduating class observed at least thirty-five cases, each student being required to deliver at least ten patients in their homes.

The dispensaries associated with the University Hospital and the Mercy Hospital are organized upon a uniform plan in order that the teaching may be the same in each. Each dispensary has the following departments: medicine, surgery, pediatrics, ophthalmology, otology, genito-urinary, gynecology, gastroenterology, neurology, orthopaedics, proctology, dermatology, laryngology, rhinology, cardiology, tuberculosis, psychiatry, oral surgery and oncology.

All students in their junior year work each day during one-third of the year in the departments of medicine and surgery of the dispensaries. In their senior year, all students work one hour each day in the special departments.

MERCY HOSPITAL

The Sisters of Mercy first assumed charge of the Hospital at the corner of Calvert and Saratoga Streets, then owned by the Washington University, in 1874. By the merger of 1878 the Hospital came under the control of the College of Physicians and Surgeons, but the Sisters continued their work of ministering to the patients.

In a very few years it became apparent that the City Hospital, as it was then called, was much too small to accommodate the rapidly growing demands upon it. However, it was not until 1888 that the Sisters of Mercy, with the assistance of the Faculty of the College of Physicians and Surgeons, were able to lay the cornerstone of the present hospital. This building was completed and occupied late in 1889. Since then the growing demands for more space have compelled the erection of additions, until now there are accommodations for 348 patients.

In 1909 the name was changed from The Baltimore City Hospital to Mercy Hospital.

The clinical material in the free wards is under the exclusive control of the Faculty of the University of Maryland School of Medicine and College of Physicians and Surgeons.

THE BALTIMORE CITY HOSPITALS

The clinical facilities of the School of Medicine have been largely increased by the liberal decision of the Department of Public Welfare to allow the use of the wards of these hospitals for medical education. The autopsy material also is available for student instruction.

Members of the junior class make daily visits to these hospitals for clinical instruction in medicine, surgery, and the specialties.

The Baltimore City Hospitals consist of the following separate divisions:

The General Hospital, 400 beds, 90 bassinets.
The Hospital for Chronic Cases, 575 beds.
The Hospital for Tuberculosis, 280 beds.
The Psychopathic Hospital, 85 beds.
Infirmary (Home for Aged) 1053 beds.

THE JAMES LAWRENCE KERNAN HOSPITAL AND INDUSTRIAL SCHOOL OF MARYLAND FOR CRIPPLED CHILDREN

This institution is situated on an estate of 75 acres at Dickeyville. The site is within the northwestern city limits and of easy access to the city proper.

The location is ideal for the treatment of children, in that it affords all the advantages of sunshine and country air.

A hospital unit, complete in every respect, offers all modern facilities for the care of any orthopaedic condition in children.

The hospital is equipped with 100 beds—endowed, and city and state supported.

The orthopaedic dispensary at the University Hospital is maintained in closest affiliation and cares for the cases discharged from the Kernan Hospital. The physical therapy department is very well equipped with modern apparatus and trained personnel. Occupational therapy has been fully established and developed under trained technicians.

THE BALTIMORE EYE, EAR, AND THROAT HOSPITAL

This institution was first organized and operated in 1882 as an outgrowth of the Baltimore Eye and Ear Dispensary, which closed on June 14, 1882. The name then given to the new hospital was The Baltimore Eye and Ear Charity Hospital. It was located at the address now known as 625 W. Franklin St. The out-patient department was opened on September 18, 1882 and the hospital proper on November 1 of the same year. In 1898 a new building afforded 24 free beds and 8 private rooms; by 1907 the beds numbered 47; at present there are 60 beds, 29 of which are free. In 1922 the present hospital building at 1214 Eutaw Place was secured and in 1926 the dispensary was opened. In 1928 a clinical laboratory was installed. During 1943 the out-patient visits numbered 18,989.

Through the kindness of the Hospital Board and Staff, our junior students have access to the dispensary which they visit in small groups for instruction in ophthalmology.

WARTIME REQUIREMENTS FOR ADMISSION

This school is cooperating with the Army Specialized Training Program and the Navy College Training Program.

ANNOUNCEMENT OF TWO-YEAR ADMISSION REQUIREMENTS AND DATA ON ACCELERATED PROGRAM

The School of Medicine of the University of Maryland announced the adoption of minimum entrance requirements, in cooperation with the war effort, effective January 7, 1943, until further notice. These minimum requirements have superseded the standard requirements for the period of the emergency.

MINIMUM REQUIREMENTS FOR ADMISSION

The minimum admission requirements are two academic years (60 semester hours or 90 quarter hours) of credits, exclusive of physical education and military science, acquired at or acceptable to an approved college of arts and sciences. Included in these requirements are minimum credits in basic subjects which must be completed by every applicant before admission:

	Semester hours	*Quarter hours*
General biology or zoology	8	12
Inorganic chemistry	8	12
Organic chemistry	6	9
Physics	6 or 8*	9 or 12*
English	6	9
Modern language (Spanish, French, German, etc.)	6	9
	40	60

(Minimum credit requirements are subject to adjustment to Army and Navy programs.)

In addition to these required subjects, electives should be chosen from courses in mathematics, English, psychology, history, sociology, political science, economics, philosophy. Supplemental courses may be taken in the basic sciences, for example, quantitative analysis in a 60 semester-hour program, and quantitative analysis and vertebrate embryology on a 90 semester-hour and degree basis.

APPLICATION FOR ADMISSION

The freshman class is limited to eighty students. Decisions on admission will be made on applicants who are not subject to service with the Armed Forces.

Applications may be filed by students who are subject to call by the Selective Service System, but no acceptance will be offered to members of this group unless a directive of the Selective Service System will permit their appropriate deferment by Local Boards.

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* Whichever is a basic course in the college involved.

Application forms and catalogues may be secured from the Committee on Admissions, School of Medicine, University of Maryland, Baltimore-1, Maryland.

ENTERING DATES DURING ACCELERATION

Beginning in 1945 Freshman classes will be admitted only once a year, in September, and will be accelerated until further notice.

The next starting dates of all classes are listed herewith:

Registration dates	*1946*	*1947*
Freshmen	September 18	September 17
Sophomores	June 19	June 18
Juniors	April 10	April 9
Seniors	April 10	January 8
Graduation dates	March 22, December 20	September 19

LENGTH OF MEDICAL COURSE DURING ACCELERATION

The medical course consisting of four (4) full academic sessions of 32 weeks each will be completed in three (3) calendar years. Course content and length may be modified to meet wartime requirements.

GRADUATION DURING ACCELERATION

Graduation will take place about three years after the entering date.

TRANSFER STUDENTS FROM THE TWO-YEAR MEDICAL SCHOOLS

Applicants from the two-year medical schools will be considered at the end of their first year of medical study.

IMPORTANT NOTICE TO APPLICANTS

At *the* time this catalogue was printed it was not possible to determine how long the "Wartime Requirements for Admission" would remain in effect.

The medical school authorities reserve the right to resume the "Standard Requirements for Admission" and the regular decelerated four-year medical school program whenever it is believed advisable to do so.

STANDARD REQUIREMENTS FOR ADMISSION

METHOD OF MAKING APPLICATION

Application forms may be filed one calendar year before the next incoming class. These forms may be secured from the Committee on Admissions, School of Medicine, University of Maryland, Baltimore-1, Maryland.

APPLICATION FOR ADMISSION TO THE FIRST YEAR

Application for admission is made by filing the required form and by having all pertinent data sent directly to the Committee on Admissions, in accordance with the instructions accompanying the application.

APPLICATION FOR ADMISSION TO ADVANCED STANDING

Students who have attended approved medical schools are eligible to file applications for admission to the second- and third-year classes. These applicants must be prepared to meet the current first-year entrance requirements in addition to presenting acceptable medical school credentials, and a medical school record based on courses which are quantitatively and qualitatively equivalent to similar courses in this school.

Application to advanced standing is made in accordance with the instructions accompanying the application form.

MINIMUM REQUIREMENTS FOR ADMISSION

The minimum requirements for admission to the School of Medicine are:

(a) Graduation from an approved secondary school, or the equivalent in entrance examinations, and

(b) Three academic years of acceptable premedical credit earned in an approved college of arts and sciences. The quantity and quality of this preprofessional course of study shall be not less than that required for recommendation by the institution where the premedical courses are being, or have been, studied.

The premedical curriculum shall include basic courses in

English
Biology
Inorganic Chemistry
Organic Chemistry
Physics
French or German

and such elective courses as will complete a balanced three-year schedule of study. The elective courses should be selected from the following three groups:

Humanities

- English (an advanced course in English composition should be taken, if possible)
- Scientific German or French (A reading knowledge of either language is desirable, although German is preferred)
- Philosophy

Natural Sciences

- Comparative Vertebrate Anatomy
- Embryology
- Quantitative Analysis
- Physical Chemistry
- Mathematics

Social Sciences

- Economics
- History
- Political Science
- Psychology (a basic course is desirable)
- Sociology, etc.

Careful attention should be given to the selection of elective courses in the natural sciences. Accordingly, it is suggested that the elective list given above be a guide in this connection and that the remainder of the college credits be accumulated from courses designed to promote a broad cultural development. Students should avoid the inclusion of college courses in subjects that occur in the medical curriculum, for example, histology, histological technique, human anatomy, bacteriology, physiology, neurology, physiological chemistry.

It is not intended that these suggestions be interpreted to restrict the education of students who exhibit an aptitude for the natural sciences or to limit the development of students who plan to follow research work in the field of medicine.

In accepting candidates for admission, preference will be given to those applicants who have acceptable scholastic records in secondary school and college, satisfactory scores in the Medical Aptitude Test, favorable letters of recommendation from their premedical committees, or from one instructor in each of the departments of biology, chemistry, and physics, and who in all other respects give every promise of becoming successful students and physicians of high standing.

Those candidates for admission who are unconditionally accepted will receive a certificate of matriculation from the Office of the Dean.

This concludes the description of the standard requirements.

COMBINED COURSE IN ARTS AND SCIENCES AND MEDICINE

A combined seven years' curriculum leading to the degrees of Bachelor of Science and Doctor of Medicine is offered by the University of Maryland. The first three years are taken in residence in the College of Arts and Sciences at College Park, and the last four years in the School of Medicine in Baltimore. (See University catalogue for details of quantitative and qualitative premedical course requirements.)

Upon the completion of the first year in the School of Medicine with an average grade of "C" or better, and upon the recommendation of the Dean, the degree of Bachelor of Science may be conferred by the College of Arts and Sciences at the commencement following the *second year* of residence.

STATE MEDICAL STUDENT QUALIFYING CERTIFICATES

Candidates for admission who live in or expect to practice medicine in Pennsylvania, New Jersey or New York, should apply to their respective state boards of education for medical student qualifying certificates (Pennsylvania and New Jersey) or approval of applications for medical student qualifying certificates (New York).

Those students who are accepted must file satisfactory State certificates in the office of the Committee on Admissions, School of Medicine, before registration. No exceptions will be made to this requirement.

Addresses of the State Certifying Offices

Director of Credentials Section, Pennsylvania Department of Public Instruction, Harrisburg, Pa.

Chief of the Bureau of Credentials, New Jersey Department of Public Instruction, Trenton, N. J.

Supervisor of Qualifying Certificates, The State Education Department, Examinations and Inspections Division, Albany, N. Y.

DEFINITION OF RESIDENCE STATUS OF STUDENTS*

Students who are minors are considered to be resident students if, at the time of their registration, the parents* have been residents of this State for at least one year.

Adult students are considered to be resident students if, at the time of their registration, they have been residents of this State for at least one year, provided such residence has not been acquired while attending any school or college in Maryland.

The status of the residence of a student is determined at the time of his first registration in the university and may not thereafter be changed by him unless, in the case of a minor, his parents* move to and become legal residents of this state by maintaining such residence for at least one full calendar year. However, the right of the student (minor) to change from a non-resident to a resident status must be established by him prior to registration for a semester in any academic year.

CURRENT FEES

Matriculation fee (paid once)	$10.00
Tuition fee (each year)—Residents of Maryland	450.00
Tuition fee (each year)—Non-Residents	600.00
Laboratory fee (each year)	25.00
Re-examination fee (each subject)	5.00†
Student health service fee (each year)	20.00

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* The term "parents" includes persons who, by reason of death or other unusual circumstances, have been legally constituted the guardians of or stand in loco parentis to such minor students.

† These fees must be paid by students in the Army and Navy training programs. Other students must pay all fees.

Maintenance and service fee (each year)...Junior Class, $8.00; others,	6.00†
Graduation fee..	15.00†
Transcript fee to graduates. First copy gratis, each copy thereafter..	1.00†

RULES FOR PAYMENT OF FEES

No fees are returnable.

Make all checks or money orders payable to the University of Maryland.

When offering checks or money orders in payment of tuition and other fees, students are requested to have them drawn in the exact amount of such fees. Personal checks whose face value is in excess of the fees due will be accepted for collection only.

Acceptance.—Payment of the matriculation fee of $10.00 and a deposit on tuition of $50.00 is required of accepted applicants before the expiration date specified in the offer of acceptance. This $60.00 deposit is not returnable and will be forfeited if the applicant fails to register, or it will be applied to the applicant's first semester's charges on registration.

Registration.—All students, after proper certification, are required to register at the Office of the Registrar. (See calendar in front of this bulletin for dates for the payments of fees, and the note regarding late registration fee.)

One-half of the tuition fee, the laboratory fee, the student health fee, the student activities fee, and the maintenance and service fee are payable on the date specified for registration for the first semester.

The remainder of the tuition fee shall be paid on the date of registration for the second semester. Fourth year students shall pay the graduation fee, in addition, at this registration.

PENALTY FOR NON-PAYMENT OF FEES

If semester fees are not paid in full on the specified registration dates, a penalty of $5.00 will be added.

If a satisfactory settlement, or an agreement for settlement, is not made with the Dean within ten days after a payment is due, the student automatically is debarred from attendance on classes and will forfeit the other privileges of the School of Medicine.

REEXAMINATION FEE

A student who is eligible to reexaminations must notify the Dean two weeks in advance of his intention to take the examinations. He will pay the comptroller $5.00 for each subject in which he is to be examined, and he must present the receipt to the faculty member giving the examination before he will be permitted to take the examination.

MAINTENANCE AND SERVICE FEE

This fee pays for the maintenance of loan collections and the student lounge, provides photographs for departmental requests and state board applications, pays room-rent for the third- and fourth-year students when on outside obstetrics, and furnishes student invitations to the commencement exercises.

PERSONAL EXPENSES

The following estimates of personal expenses for the academic year of eight months have been prepared by students, and are based upon actual experience. In addition to these the student must bear in mind the expenditure for a microscope.

	Low	*Average*	*Liberal*
Books	$50	$75	$100
College incidentals	20	20	20
Board, eight months	224	288	352
Room rent	144	184	216
Clothing and laundry	50	80	150
All other expenses	25	50	75
Total	$513	$697	$913

STUDENT HEALTH SERVICE

T. Nelson Carey, M.D. .... Director, Student Health Service

The Medical School has made provision for the systematic care of students according to the following plan:

1. *Preliminary Examination*—All new students will be examined during the first week of the semester. Notice of the date, time, and place of the examination will be announced to the classes and on the bulletin board. The passing of this physical examination is necessary before final acceptance of any student.

2. *Medical Attention*—Students in need of medical attention will be seen by the school physician, Dr. T. N. Carey, in his office at the medical school, at 9 A.M. daily, except Saturday and Sunday. In case of necessity, students will be seen at their homes.

3. *Hospitalization*—If it becomes necessary for any student to enter the hospital during the school year, the school has arranged for the payment of part or all of his hospital expenses, depending on the length of his stay and special expenses incurred. This applies only to students admitted through the school physician's office.

4. *Physical Defects*—Prospective students are advised to have any known physical defects corrected before entering school in order to prevent loss of time which later correction might incur.

5. *Eye Examination*—Each new matriculate is required to undergo an eye examination at the hands of an oculist (Doctor of Medicine) within three months before entering the School of Medicine. Long study hours bring out unsuspected eye defects which cause much loss of time and inefficiency in study if not corrected until after school work is under way.

6. *Limitations*—It is not the function of this service to treat chronic conditions contracted by students before admission, nor to extend treatment to acute conditions arising in the period between academic years, unless the school physician recommends this service.

GENERAL RULES

The right is reserved to make changes in the curriculum, the requirements for graduation, the fees and in any of the regulations whenever the university authorities deem it expedient.

ADVANCEMENT AND GRADUATION

1. All students are required to take the spring examinations unless excused by the Dean.
2. When a student has failures in two completed major courses, he or she shall be dropped from the rolls of the Medical School.
3. No student will be permitted to pass to a higher class with conditions.
4. Should a student be required to repeat any year in the course, he must pay regular fees.
5. A student failing in final examinations for graduation at the end of the fourth year will be required to repeat the entire course of the fourth year and to take examinations in such other branches as may be required, should he again be permitted to enter the school as a candidate for graduation.
6. The general fitness of a candidate for graduation, as well as the results of his examinations, will be taken into consideration by the faculty.

EQUIPMENT

7. At the beginning of the first year, all students must be prepared to purchase microscopes of a satisfactory type equipped with a mechanical stage and a substage lamp.

A standard microscope of either Bausch & Lomb, Leitz, Spencer, or Zeiss make, fitted with the following attachments, will fill the requirements:

Oculars: 10 x and 5 x.
Triple nose piece with 16 mm., 4 mm., and 1.9 mm. 125 N.A. oil immersion lens.
Wide aperture stage with quick screw condenser.

All used microscopes are subject to inspection and approval before their use in the laboratory is permitted. The student is cautioned against the purchase of such an instrument before its official approval by the school.

8. Students in the second year class are required to provide stethoscopes.
9. Third- and fourth-year students are required to provide haemocytometers, opthalmoscopes and otoscopes.

STATE QUALIFYING CERTIFICATES

10. Candidates for admission who live in or expect to practice medicine in Pennsylvania, New Jersey or New York must file State certificates in the office of the Committee on Admissions, School of Medicine, before registration. No exception will be made to this rule.

EYE EXAMINATION BEFORE ADMISSION

11. Each new matriculate in each class is required to present to the Committee on Admissions a certificate from an oculist, (a graduate in medicine) that the matriculate's eyes have been examined and are in condition, with or without glasses as the case may be, to endure the strain of close and intensive reading.

It is required that this examination be completed within three months prior to registration and that the certificate be mailed to the Committee on Admissions not later than one month before registration.

AWARDING OF COMBINED DEGREES

12. Students entering the School of Medicine on a three-year requirement basis from colleges which usually grant a degree on the successful completion of the first year of medicine, are restricted by the following rule:

> Upon completion of the first year in the School of Medicine with an average grade of "C" or better, and upon recommendation of the Dean of the School of Medicine, the degree of Bachelor of Science may be conferred by a College of Arts and Sciences following the student's *second year* of residence in the School of Medicine.

COST OF TRANSCRIPTS

13. Graduates will receive the first transcript of record without charge. Subsequent copies will cost one dollar each. Requests for transcripts must be filed with the Registrar's Office, University of Maryland, Lombard and Greene Streets, Baltimore-1, Maryland.

PRIZES

THE FACULTY PRIZE

The faculty will award the gold medal and five certificates of honor to those six of the first ten highest ranking candidates for graduation who, during the four academic years, have exhibited outstanding qualifications for the practice of medicine.

THE DR. A. BRADLEY GAITHER MEMORIAL PRIZE

A prize of $25.00 is given each year by Mrs. A. Bradley Gaither as a memorial to the late Dr. A. Bradley Gaither, to the student in the senior class doing the best work in genito-urinary surgery. This prize will not be awarded during the period of acceleration.

SCHOLARSHIPS

All scholarships are assigned for one academic year, unless specifically reawarded on consideration of an application.

Official application forms are obtainable at the Dean's office, where they should be filed two months before the ensuing academic year.

THE DR. SAMUEL LEON FRANK SCHOLARSHIP

(Value $100.00)

This scholarship was established by Mrs. Bertha Rayner Frank as a memorial to the late Dr. Samuel Leon Frank, an alumnus of this university.

It is awarded by the Trustees of the Endowment Fund of the University each year upon nomination by the Faculty Board "to a medical student of the University of Maryland, who in the judgment of said Council, is of good character and in need of pecuniary assistance to continue his medical course."

This scholarship is awarded to a second, third or fourth year student who has successfully completed one year's work in this school. No student may hold this scholarship for more than two years.

THE CHARLES M. HITCHCOCK SCHOLARSHIPS

(Value $100.00 each)

Two scholarships were established from a bequest to the School of Medicine by the late Charles M. Hitchcock, M.D., an alumnus of the university.

These scholarships are awarded annually by the Trustees of the Endowment Fund of the University, upon nomination by the Faculty Board, to students who have meritoriously completed the work of at least the first year of the course in medicine, and who present to the Board satisfactory evidence of a good moral character and of inability to continue the course without pecuniary assistance.

THE RANDOLPH WINSLOW SCHOLARSHIP

(Value $100.00)

This scholarship was established by the late Randolph Winslow, M.D., LL.D.

It is awarded annually by the Trustees of the Endowment Fund of the University, upon nomination by the Faculty Board, to a "needy student of the Senior, Junior, or Sophomore Class of the Medical School."

"He must have maintained an average grade of 85% in all his work up to the time of awarding the scholarship."

"He must be a person of good character and must satisfy the Faculty Board that he is worthy of and in need of assistance."

THE DR. LEO KARLINSKY MEMORIAL SCHOLARSHIP

(Value $125.00)

This scholarship was established by Mrs. Ray Mintz Karlinsky as a memorial to her husband, the late Dr. Leo Karlinsky, an alumnus of the university.

It is awarded annually by the Trustees of the Endowment Fund of the University, upon the nomination of the Faculty Board, to "a needy student of the Senior, Junior or Sophomore Class of the Medical School."

He must have maintained in all his work up to the time of awarding the scholarship a satisfactory grade of scholarship.

He must be a person of good character and must satisfy the Faculty Board that he is worthy of and in need of assistance.

THE UNIVERSITY SCHOLARSHIP

A scholarship which entitles the holder to exemption from payment of tuition fee for the year, is awarded annually by the Faculty Board to a student of the senior class in need of assistance who presents to the Faculty Board satisfactory evidence of good character and scholarship.

THE FREDERICA GEHRMANN SCHOLARSHIP

(Value $200.00)

(Not open to holders of Warfield and Cohen Scholarships)

This scholarship was established by the bequest of the late Mrs. Frederica Gehrmann and is awarded to a third-year student who at the end of the second year has passed the best practical examinations in physiology, pharmacology, pathology, bacteriology, immunology, serology, surgical anatomy and neuroanatomy.

THE CLARENCE AND GENEVRA WARFIELD SCHOLARSHIPS

(Value $300.00 each)

There are five scholarships established by the regents from the income of the fund bequeathed by the will of Dr. Clarence Warfield.

Terms and Conditions: These scholarships are available to students of any of the classes of the course in medicine. Preference is given to students from the counties of the state of Maryland which the Faculty Board may from time to time determine to be most in need of medical practitioners.

Any student receiving one of these scholarships must agree, after graduation and a year's internship, to undertake the practice of medicine, for a term of two years, in the county to which the student is accredited, or in a county selected by the Board. In the event that a student is not able to comply with the condition requiring him to practice in the county to which he is accredited by the Board, the money advanced by the regents shall be refunded by the student.

THE ISRAEL AND CECELIA E. COHEN SCHOLARSHIP

(Value $150.00)

This scholarship was established by the late Eleanor S. Cohen in memory of her parents, Israel and Cecelia E. Cohen. Terms and conditions: This scholarship will be available to students of any one of the classes of the course in medicine; preference is given to students of the counties in the state of Maryland which the Faculty Board may from time to time determine to be most in need of medical practitioners. Any student receiving one of these scholarships must, after graduation and a year's internship, agree to undertake the practice of medicine for a term of two years in the county to which the student is accredited, or in a county selected by the council. In the event that a student is not able to comply with the condition requiring him to practice in the county to which he is accredited by the Board, the money advanced by the regents shall be refunded.

THE DR. HORACE BRUCE HETRICK SCHOLARSHIP

(Value $125.00)

This scholarship was established by Dr. Horace Bruce Hetrick as a memorial to his sons, Bruce Hayward Hetrick and Augustus Christian Hetrick. It is to be awarded by the Faculty Board to a student of the senior class.

THE HENRY ROLANDO SCHOLARSHIP

(Value approximately $250.00)

The Henry Rolando Scholarship was established by the Board of Regents of the University of Maryland from a bequest to the Board by the late Anne H. Rolando for the use of the Faculty of Medicine.

This scholarship will be awarded each academic year on the recommendation of the Faculty Board to a "poor and deserving student."

THE READ SCHOLARSHIPS

The sum of $500.00 is now available to cover two (2) scholarships in the amount of $250.00 each for the scholastic year, beginning in 1945, as a donation from the Read Drug and Chemical Company of Baltimore, Maryland. Two students are to be selected by the Dean of the School in collaboration with the Scholarship and Loan Committee of the Medical School with the provision that the students selected shall be worthy, deserving, civilian students, residents of the State of Maryland.

LOAN FUNDS

W. K. KELLOGG FUND

This loan fund was established for the academic year 1942 with money granted by the W. K. Kellogg Foundation. The interest paid on the loans, together with the principal of the fund as repaid, will be used to found a rotating loan fund. Loans will be made on the basis of need, character and scholastic attainment.

FACULTY OF MEDICINE LOAN FUND

A Faculty of Medicine Loan Fund was established with money derived from the bequest of Dr. William R. Sanderson, Class 1882, and the gift of Dr. Albert Stein, Class 1907. Loans will be made on the basis of need, character, and scholastic ability.

ORGANIZATION OF THE CURRICULUM

The curriculum is organized under twelve departments.

1. Anatomy (including Histology and Embryology).
2. Physiology.
3. Bacteriology and Immunology.
4. Biological Chemistry.
5. Pharmacology and Materia Medica.
6. Pathology.
7. Medicine (including Medical Specialties).
8. Surgery (including Surgical Specialties).
9. Obstetrics.
10. Gynecology.
11. Ophthalmology.
12. Roentgenology.

The instruction is given in four academic years of graded work.

Several courses of study extend through two years or more, but in no case are the students of different years thrown together in the same course of teaching.

The first and second years are devoted largely to the study of the structures and functions of the normal body. Laboratory work occupies most of the student's time during these two years.

Some introductory instruction in medicine and surgery is given in the second year. The third and fourth years are almost entirely clinical.

A special feature of instruction in the school is the attempt to bring together teacher and student in close personal relationship. In many courses of instruction the classes are divided into small groups and a large number of instructors insures attention to the requirements of each student.

In most courses the final examination as the sole test of proficiency has disappeared and the student's final grade is determined largely by partial examinations, recitations and assigned work carried on throughout the course.

DEPARTMENT OF GROSS ANATOMY

Eduard Uhlenhuth	Professor of Anatomy
Frank H. J. Figge	Associate Professor of Gross Anatomy
	Assistant Professor of Gross Anatomy
Vernon E. Krahl	Instructor in Gross Anatomy
★Harry A. Teitelbaum	Instructor in Gross Anatomy
Milton L. Solomon	Research Associate in Gross Anatomy

Otto C. Brantigan	Professor of Surgical Anatomy
★Harry C. Hull	Assistant Professor of Surgery
E. Eugene Covington	Associate in Surgical Anatomy
W. Wallace Walker	Associate in Surgical Anatomy
★Herbert E. Reifschneider	Instructor in Surgery
William B. Settle	Instructor in Surgical Anatomy
★Harry C. Bowie	Assistant in Surgical Anatomy

Gross Anatomy. *First Year.* Six lectures and conferences and seventeen hours of laboratory (dissection of the human subject) are given each week during the first semester. Drs. Uhlenhuth, Figge and Krahl.

Total hours: 350.

Topographic and Surgical Anatomy. *Second Year.* The course is designed to bridge the gap between abstract anatomy and clinical anatomy as applied to the study and practice of medicine and surgery. Students are required to demonstrate all points, outlines, and regions on the cadaver. Underlying regions are dissected to bring out outlines and relations of structures.

Two lectures and two laboratory periods are given each week during the second semester. Drs. Brantigan, Covington, Walker and Settle.

Total hours: 96.

Advanced Anatomy (*elective course*). Selected problems in gross anatomy. This course is intended to offer to the sophomore student an opportunity of extending the knowledge secured in the freshman course. Drs. Uhlenhuth, Figge and Brantigan.

Total hours: 64.

In addition to the above course, facilities for special anatomical problems are offered to the more advanced student and physician.

Graduate Courses. Consult the catalogue of the Graduate School for descriptions of the graduate courses offered by members of the staff.

DEPARTMENT OF HISTOLOGY AND EMBRYOLOGY

Carl L. Davis	Professor of Anatomy
O. G. Harne	Associate Professor of Histology
John F. Lutz	Assistant Professor of Histology
	Assistant Professor of Histology

First Year. The course in histology is divided equally between the study of the fundamental tissues and that of organs. Throughout the entire course the embryology of the part being studied precedes the study of the fully developed tissue. Thus embryology becomes a correlated part of the whole subject of microscopic anatomy and not an independent subject.

Each student is furnished a set of histological slides, previously prepared in our own laboratory, thus insuring a uniform and satisfactory quality of material for study and permitting the time of the student to be expended in the study of material rather than in the technic of its preparation. The object of the course is to present the evidence of function as shown by the structure of tissues and organs. Drs. Davis, Lutz and Harne.

An optional laboratory course is offered. This supplements the required course giving laboratory experience which can not be incorporated in the former. No added charge is made for the course.

Total hours: 150.

NEURO-ANATOMY

First Year. Neuro-anatomy embraces a study of the fundamental structure of the central nervous system as applied to its function. An abundance of material permits of individual dissection of the human brain. A series of appropriately stained sections of the human brain stem is furnished each student for the microscopic study of the internal structure of the nervous system. Drs. Davis, Lutz and Harne.

Total hours: 100.

Graduate Courses. Consult the catalogue of the Graduate School for descriptions of the graduate courses offered by members of the staff.

DEPARTMENT OF PHYSIOLOGY

William R. Amberson	Professor of Physiology
Dietrich Conrad Smith	Associate Professor of Physiology
Robert H. Oster	Associate Professor of Physiology
Rubert S. Anderson	Assistant Professor of Physiology
Joye J. Jennings	Instructor in Physiology
Mary E. Chinn	Assistant in Physiology

Five lectures, one conference and two laboratory periods a week, 1st semester of each academic year. The fundamental concepts of physiology are presented with special reference to mammalian problems.

Total hours: 224.

Graduate Courses. Consult the catalogue of the Graduate School for descriptions of the graduate courses offered by members of the staff.

DEPARTMENT OF BACTERIOLOGY AND IMMUNOLOGY

Frank W. Hachtel	Professor of Bacteriology
James G. McAlpine	Associate Professor of Bacteriology
★Henry F. Buettner	Instructor in Bacteriology
H. Edmund Levin	Instructor in Bacteriology

The principles of general bacteriology are taught by quiz, conference, and lecture.

Instruction in bacteriology is given in the laboratory to students of the second year class during the first semester. This includes the methods of preparation of culture media, the study of pathogenic bacteria, and the bacteriological examination of water and milk. The bacteriological diagnosis of communicable diseases is also included.

The principles of immunology are presented by means of quizzes, conferences and lectures to the second year class in the second semester.

The course includes a consideration of infection and immunity, the nature and action of the various antibodies, complement fixation and flocculation tests, hypersensitiveness, and the preparation of bacterial vaccines.

Experiments are carried out by the class in the laboratory. During the latter half of the semester the class is divided into sections.

Total hours: Bacteriology 120.
Immunology 72.

Graduate Courses. Consult the catalogue of the Graduate School for descriptions of the graduate courses offered by members of the staff.

DEPARTMENT OF BIOLOGICAL CHEMISTRY

H. Boyd Wylie	Professor of Biological Chemistry
Emil G. Schmidt	Associate Professor of Biological Chemistry
Glenn S. Weiland	Assistant Professor of Biological Chemistry
Frank N. Ogden	Associate in Biological Chemistry
Ann Virginia Brown	Instructor in Biological Chemistry

This course is designed to present the principles of biological chemistry and to indicate their applications to the clinical aspects of medicine. The phenomena of living matter and its chief ingredients, secretions and excretions are discussed in lectures and conferences and examined experimentally. Training is given in biochemical methods of investigation. Total hours: 208.

Graduate Courses. Consult the catalogue of the Graduate School for descriptions of the graduate courses offered by members of the staff.

DEPARTMENT OF PHARMACOLOGY

John C. Krantz, Jr.	Professor of Pharmacology
C. Jelleff Carr	Associate Professor of Pharmacology
William Ellsworth Evans, Jr.	Associate Professor of Pharmacology
Ruth Musser	Instructor in Pharmacology
Georg K. Gülck	Assistant in Pharmacology
William G. Harne	Demonstrator in Pharmacology
Frederick K. Bell	U. S. Pharmacopoeia Fellow
Dorothy K. Shipley	Fellow in Pharmacology
Harry K. Ivamota	Emerson Fellow in Pharmacology
Virginia M. Waters	Emerson Fellow in Pharmacology
deCamp B. Farson	Emerson Fellow in Pharmacology

This course is designed to include those phases of pharmacology necessary for an intelligent use of drugs in the treatment of disease. The didactic instruction includes materia medica, pharmacy, prescription-writing, toxicology, posology, pharmacodynamics, and experimental therapeutics. The laboratory exercises parallel the course of lectures.

In addition, optional conference periods and lectures are available for students desiring further instruction or advice.

Total hours: 192.

Graduate Courses. Consult the catalogue of the Graduate School for descriptions of the graduate courses offered by members of the staff.

DEPARTMENT OF PATHOLOGY

Hugh R. Spencer	Professor of Pathology
Robert B. Wright	Associate Professor of Pathology
C. Gardner Warner	Associate Professor of Pathology
★Walter C. Merkel	Assistant Professor of Pathology
★D. James Greiner	Assistant Professor of Pathology
Howard J. Maldeis	Associate in Pathology
Albert E. Goldstein	Associate in Pathology
John A. Wagner	Associate in Pathology

★William S. Love, Jr.	Instructor in Pathology
Leon Freedom	Instructor in Pathology
Milton S. Sacks	Instructor in Pathology
Henry L. Wollenweber	Instructor in Pathology
★Edward F. Cotter	Instructor in Pathology
Benedict Skitarelic	Instructor in Pathology
Dexter L. Reimann	Instructor in Pathology
★Conrad B. Acton	Assistant in Pathology
★Howard B. Mays	Assistant in Pathology
★Ephraim T. Lisansky	Assistant in Pathology
★Karl F. Mech	Assistant in Pathology
D. McClelland Dixon	Assistant in Pathology
Helen A. Horn	Weaver Fellow in Pathology

Courses of instruction in pathology are given during the second and third years. The courses are based on the previous study of normal structure and function and aim to outline the history of disease. The relationship between clinical symptoms and anatomical lesions is constantly stressed.

General Pathology. *Second Semester, Second Year.* This course includes the study of disturbances of the body fluids; disturbances of structure, nutrition and metabolism of cells; disturbances of fat, carbohydrate and protein metabolism; disturbances of pigment metabolism; inflammation and tumors.

Laboratory instruction is based on the study of prepared slides (loan collection) and corresponding gross material.

Applied Pathology, Including Gross Morbid Anatomy and Morbid Physiology. *Third Year.* The laboratory instruction in this course is carried out in small teaching museums where prepared specimens and material from autopsies with clinical histories and sections are available for study. For this work the class is divided into small groups. Clinical correlation is stressed.

Autopsies. *Third Year.* Students in small groups attend autopsies at the morgues of the University Hospital and the Baltimore City Hospitals.

Clinical-Pathological Conference. *(Fourth Year.)* These exercises are held in collaboration with the Department of Medicine. Selected cases are discussed and autopsy findings are presented.

Second year	184 hours
Third year	160 hours
Fourth year	30 hours
Total	374 hours

DEPARTMENT OF MEDICINE

★Maurice C. Pincoffs	Professor of Medicine
Thomas P. Sprunt	Acting Head of the Department of Medicine and Professor of Clinical Medicine
Joseph E. Gichner	Professor of Clinical Medicine and Physical Therapeutics
G. Carroll Lockard	Professor of Clinical Medicine
Harvey G. Beck	Professor of Clinical Medicine
H. Raymond Peters	Professor of Clinical Medicine
Paul W. Clough	Associate Professor of Medicine

Sydney R. Miller	Associate Professor of Medicine
Walter A. Baetjer	Associate Professor of Medicine
★William S. Love, Jr.	Associate Professor of Medicine
★Louis A. M. Krause	Associate Professor of Medicine
T. Nelson Carey	Associate Professor of Medicine
Charles C. W. Judd	Associate Professor of Medicine
William H. Smith	Associate Professor of Clinical Medicine
Howard J. Maldeis	Associate Professor of Legal Medicine
George McLean	Assistant Professor of Medicine
John E. Legge	Assistant Professor of Medicine
Thomas C. Wolff	Assistant Professor of Medicine
H. M. Bubert	Assistant Professor of Medicine
J. S. Eastland	Assistant Professor of Medicine
Milton S. Sacks	Assistant Professor of Medicine
★Lewis P. Gundry	Assistant Professor of Medicine
Charles R. Goldsborough	Lecturer in Medicine
Clark H. Yeager	Lecturer in Tropical Medicine
Wetherbee Fort	Associate in Medicine
Frank J. Geraghty	Associate in Medicine
E. H. Tonolla	Associate in Medicine
★Harry V. Langeluttig	Associate in Medicine
Sol Smith	Associate in Medicine
★Samuel T. Helms	Instructor in Medicine
David Tenner	Instructor in Medicine
★R. B. Mitchell, Jr.	Instructor in Medicine
Samuel Legum	Instructor in Medicine
★M. S. Shiling	Instructor in Medicine
H. Edmund Levin	Instructor in Medicine
Robert A. Reiter	Instructor in Medicine
W. Grafton Hersperger	Instructor in Medicine
Meyer W. Jacobson	Instructor in Medicine
★Conrad Acton	Instructor in Medicine
★Hugh G. Whitehead	Instructor in Medicine
★Philip D. Flynn	Instructor in Medicine
★Edward S. Kallins	Instructor in Medicine
★Irving Freeman	Instructor in Medicine
John A. Myers	Instructor in Medicine
Kurt Levy	Instructor in Medicine
★William G. Helfrich	Instructor in Medicine
★Francis G. Dickey	Instructor in Medicine
C. Edward Leach	Instructor in Medicine
Lawrence M. Serra	Instructor in Medicine
Marie A. Andersch	Instructor in Medicine
★W. H. Triplett	Assistant in Medicine
Morris Fine	Assistant in Medicine
William H. Grenzer	Assistant in Medicine
★George Silverton	Assistant in Medicine
★Lawrence Katzenstein	Assistant in Medicine
Leon Ashman	Assistant in Medicine
★Harry M. Robinson, Jr.	Assistant in Medicine
Nathaniel M. Beck	Assistant in Medicine

★Joseph M. Blumberg	Assistant in Medicine
★Paul E. Carliner	Assistant in Medicine
Samuel Snyder	Assistant in Medicine
★S. Edwin Muller	Assistant in Medicine
Louis J. Kroll	Assistant in Medicine
★John L. Atkins	Assistant in Medicine
★William K. Waller	Assistant in Medicine
★Ephraim T. Lisansky	Assistant in Medicine
★Nachman Davidson	Assistant in Medicine
★Samuel T. R. Revell	Assistant in Medicine
★Arthur Karfgin	Assistant in Medicine
★Joseph E. Muse, Jr.	Assistant in Medicine
Daniel Wilfson, Jr.	Assistant in Medicine
★Joseph B. Gross	Assistant in Medicine
★Samuel J. Hankin	Assistant in Medicine
★Robert C. Crawford	Assistant in Medicine
★Charles W. Knerler	Assistant in Medicine
★Edwin O. Daue, Jr.	Assistant in Medicine
★Robert L. Gibbs	Assistant in Medicine
★James R. Karns	Assistant in Medicine
★Robert B. Mearns	Assistant in Medicine
★William H. Kammer, Jr.	Assistant in Medicine
Benedict Skitarelic	Assistant in Medicine
L. Ann Hellen	Assistant in Medicine
Leslie Harrell Pierce	Assistant in Medicine
Audrey M. Funk	Assistant in Medicine
★Frederick J. Vollmer	Assistant in Medicine
Margaret Virginia Palmer	Assistant in Medicine
★Donald J. Roop	Assistant in Medicine
★William C. Lowe	Assistant in Medicine
John R. Davis	Assistant in Medicine
★J. Emmett Queen	Assistant in Medicine
Wilfred H. Townshend, Jr.	Hitchcock Fellow in Medicine

GENERAL OUTLINE

Second Year

Introduction to clinical medicine.

(a) Introductory physical diagnosis. (1 hour a week, first semester; 2 hours a week, second semester.)

(b) Medical clinics. (1 hour a week, second semester.)

Third Year

I. The methods of examination (13 hours a week). (a) History taking. (b) Physical diagnosis. (c) Clinical pathology.

These subjects are taught and practiced in the hospital out-patient department and in the clinical laboratory.

II. The principles of medicine (200 hours).

(a) Lectures, clinics and demonstrations in general medicine, neurology, pediatrics psychiatry and preventive medicine.

III. The principles of therapeutics (15 hours). Lectures and demonstrations.

Fourth Year

The practice of medicine.

I. Clinical clerkship on the medical wards. (26 hours a week for ten weeks.)
  (a) Responsibility, under supervision, for the history, physical examination, laboratory examinations and progress notes of assigned cases.
  (b) Ward classes in general medicine, the medical specialties, and therapeutics.
II. Clinics in general medicine and the medical specialties.
  (6 hours a week.)
III. Dispensary work in the medical specialties.
IV. Clinical-pathological conferences (1 hour a week).

MEDICAL DISPENSARY WORK

The medical dispensaries of both the Mercy and the University Hospitals are utilized for teaching in the third year. Each student spends two hours daily for ten weeks in dispensary work. The work is done in groups of four to six students under an instructor. Systematic history-taking is especially stressed. Physical findings are demonstrated. The student becomes familiar with the commoner acute and chronic disease processes.

PHYSICAL DIAGNOSIS

Second Year. Didactic lectures and practical demonstrations in topographical anatomy and normal physical signs. Dr. McLean.

Third Year. The class is divided into small groups and each section receives instruction for two hours daily for ten weeks. This course is given at the Baltimore City Hospitals. The large clinical material there is utilized to give each student the opportunity to familiarize himself with the common types of bodily structure, with the normal variations in physical signs and with the physical signs of the chief pulmonary, circulatory and abdominal diseases. A course of lectures (1 hour a week) on physical diagnosis supplements the practical work in this subject. Drs. Wolff, Reiter, Ashman, Kroll, Legum and Wilfson.

THERAPEUTICS

Third Year. General therapeutics and materia medica are taken up and an effort is made to familiarize the student with the practical treatment of disease. The special therapy of the chief diseases is then reviewed. One hour a week. Dr. Lockard.

Fourth Year. Special consideration is given to the practical application of therapeutic principles in bedside teaching and the chief therapeutic methods are demonstrated.

Students attend therapeutic ward rounds once a week throughout their medical trimester.

TROPICAL MEDICINE

Certain phases of tropical medicine are considered in the course on clinical pathology. In addition, Dr. Clark H. Yeager conducts a course of lectures and demonstrations to the entire fourth year class. The course occupies one hour weekly for twenty weeks.

TUBERCULOSIS

During the third year in connection with the instruction in physical diagnosis a practical course is given at the Municipal Tuberculosis Hospital. Stress is laid upon the recognition of the physical signs of the disease, as well as upon its symptomatology and gross pathology.

CARDIOLOGY

In the third year a series of lectures and clinics correlated with pathological studies is given the entire class.

During the fourth year an elective course in cardiology is offered at the Mercy Hospital. The course occupies one and one-half hours weekly. Physical diagnosis, electocardiography and the therapeutic management of cardiac cases are stressed.

Elective outpatient work is available also to members of the fourth year class in the cardiac clinic of the University Hospital.

SYPHILIS

Third Year. During the third year the subject of syphilis is dealt with in the lecture course.

Fourth Year. An elective course in the therapeutic management of syphilis is offered in the dispensary.

CLINICAL PATHOLOGY

Milton S. Sacks	Assistant Professor of Medicine and Head of Department of Clinical Pathology
H. Raymond Peters	Professor of Clinical Medicine
Sol Smith	Associate in Medicine
★Samuel T. Helms	Instructor in Medicine
John A. Myers	Instructor in Medicine
Marie A. Andersch	Biochemist, University Hospital, Instructor in Medicine
★Hugh G. Whitehead	Assistant in Medicine
★Joseph M. Blumberg	Assistant in Medicine
★S. Edwin Muller	Assistant in Medicine
John A. Wagner	Assistant in Medicine
Dexter L. Reimann	Assistant in Medicine
Benedict Skitarelic	Assistant in Medicine
L. Ann Hellen	Assistant in Medicine
Audrey M. Funk	Assistant in Medicine

During the third year the student is thoroughly drilled in the technic of the usual clinical laboratory work, so that he is able to perform all routine examinations which may be called for during his fourth year, in connection with the work in the wards and dispensary.

The practical work is supplemented by a series of didactic lectures and demonstrations in which the entire teaching staff of the department takes an active part.

The microscopical and chemical study of blood, exudates and transudates, gastric juice, spinal fluid, feces and urine are successively taken up, and special attention directed to the clinical significance of the findings.

Clinical parasitology from the standpoint of the infecting agent and the carrier is given careful consideration.

The entire course is thoroughly practical. Each student provides his own microscope and blood counters and is supplied a haemoglobinometer for his exclusive use. Every two students are equipped with a special laboratory outfit for all routine purposes.

During the fourth year the student applies in the laboratories of the various affiliated hospitals what he has learned during the preceding year. He is also supplied with a laboratory outfit which is sufficiently complete to enable him to work independently of the general equipment. Special instructors are available during certain hours to give necessary assistance and advice.

GASTRO-ENTEROLOGY

Theodore H. Morrison	Clinical Professor of Gastro-Enterology
Maurice Feldman	Assistant Professor of Gastro-Enterology
Zachariah Morgan	Assistant Professor of Gastro-Enterology
★Samuel Morrison	Assistant Professor of Gastro-Enterology
Z. Vance Hooper	Associate in Gastro-Enterology
Albert J. Shochat	Instructor in Gastro-Enterology
★Francis G. Dickey	Instructor in Medicine
John A. Myers	Assistant in Gastro-Enterology
Nathaniel M. Beck	Assistant in Gastro-Enterology
Alfred S. Lederman	Assistant in Gastro-Enterology

Third Year. A series of six lectures is given on the diseases of the digestive tract.

Fourth Year. Clinics and demonstrations are given to the class for one hour a week; dispensary instruction to small groups throughout the entire session. Practical instruction is given in the use of modern methods of study of the diseases of the gastro-intestinal tract.

PSYCHIATRY

Ross McC. Chapman	Professor of Psychiatry
Ralph P. Truitt	Associate Professor of Psychiatry
Lawrence F. Woolley	Associate Professor of Psychiatry
★Harry Goldsmith	Assistant Professor of Psychiatry
★H. W. Newell	Assistant Professor of Psychiatry
★Harry M. Murdock	Assistant Professor of Psychiatry
★Leslie B. Hohman	Lecturer in Psychiatry
William W. Elgin	Associate in Psychiatry
Hans W. Loewald	Associate in Psychiatry
★A. Russell Anderson	Instructor in Psychiatry
★Philip S. Wagner	Instructor in Psychiatry
J. G. N. Cushing	Instructor in Psychiatry
Francis McLaughlin	Instructor in Psychiatry
Samuel Novey	Instructor in Psychiatry
Kathryn L. Schultz	Instructor in Psychiatry

First Year. The student attends lectures and demonstrations at the Sheppard and Enoch Pratt Hospital two hours a week for a period of sixteen weeks. An opportunity is given to observe and talk with patients. The primary object of instruction lies in the significance of personality development in the normal as well as in the abnormal individual.

Second Year. The student attends fourteen demonstration lectures on psychopathology.

Third Year. Six hours are devoted to the demonstration of clinical psychopathology; six hours are given to clinical presentation of the psychoses; twelve hours are used for clinical lectures with demonstration and discussion of the management of psychiatric problems encountered in the general practice of medicine; thirty hours are given to history-taking and study of patients in the out-patient clinic.

Fourth Year. The neuroses, psychoneuroses and psychoses are dealt with in ten hours of lectures and demonstrations. In this year the class is divided into sections for clinical conferences on selected cases.

PEDIATRICS

C. Loring Joslin	Professor of Pediatrics
Edgar B. Friedenwald	Professor of Clinical Pediatrics
★T. Campbell Goodwin	Associate Professor of Pediatrics
Hugh W. Josephs	Associate Professor of Pediatrics
John H. Traband	Assistant Professor of Pediatrics
Albert Jaffe	Assistant Professor of Pediatrics
A. H. Finkelstein	Assistant Professor of Pediatrics
Frederick B. Smith	Assistant Professor of Pediatrics
J. Edmund Bradley	Assistant Professor of Pediatrics
Clewell Howell	Associate in Pediatrics
Samuel S. Glick	Associate in Pediatrics
William M. Seabold	Associate in Pediatrics
G. Bowers Mansdorfer	Associate in Pediatrics
★M. Paul Byerly	Instructor in Pediatrics
★Jerome Fineman	Instructor in Pediatrics
★B. Matthew Debuskey	Instructor in Pediatrics
★Gibson J. Wells	Instructor in Pediatrics
Arnold F. Lavenstein	Instructor in Pediatrics
Mary L. Hayleck	Instructor in Pediatrics
W. J. Schmitz	Assistant in Pediatrics
★Israel P. Meranski	Assistant in Pediatrics
★Lauriston L. Keown	Assistant in Pediatrics
★Earle S. Scott	Assistant in Pediatrics
★William Earl Weeks	Assistant in Pediatrics
★Thomas A. Hedrick	Assistant in Pediatrics
★J. Carlton Wich	Assistant in Pediatrics
A. Robert Marks	Assistant in Pediatrics

Third Year. The course is presented as follows:

Lectures on infant feeding and the fundamentals of diseases of infants and children. (15 hours.)

Lectures on contagious diseases in conjunction with the Department of Hygiene and Preventive Medicine. (14 hours.)

A special course in physical diagnosis is given at City Hospitals. (20 hours.)

Clinical conferences demonstrating diseases of the new-born. (6 hours.)

Fourth Year. An amphitheatre clinic is given at which patients are shown to demonstrate the features of the diseases discussed. (30 hours.)

Conferences and demonstrations are given in problems concerning diagnosis, care, treatment and clinical pathology of the diseases of infants and children. (30 hours.)

Students are assigned subjects for the preparation of theses.

Clinical clerkships are assigned on the pediatric wards, where experience is gained in taking histories, making physical examinations, doing routine laboratory work, and following up the patients' progress. This is under the supervision of the visiting staff. (140 hours.)

Instruction is given in the pediatric clinic of the out-patient department of the University Hospital. This consists of 1½ hours daily for five weeks—30 minutes each day being devoted to a clinical demonstration of some interesting case by a member of the staff; one hour daily to taking histories and making physical examinations under supervision of one of the staff instructors. (45 hours.)

Total hours: 300.

NEUROLOGY

Irving J. Spear	Professor of Neurology
Andrew C. Gillis	Professor of Neurology
Leon Freedom	Associate Professor of Neurology
Benjamin Pushkin	Assistant Professor of Neurology
Philip F. Lerner	Associate in Neurology
★William L. Fearing	Instructor in Neurology
★Edward F. Cotter	Assistant in Neurology
★Harry A. Teitelbaum	Assistant in Neurology
John W. Machen	Assistant in Neurology
George C. Medairy	Assistant in Neurology

Second Year. Fifteen one-hour lectures are given to correlate the anatomy and physiology of the nervous system with clinical neurology.

Third Year. Twenty hours of instruction are given to the whole class in neuropathology supplemented with pathological demonstrations. Sixteen lecture-demonstrations are given in which the major types of the diseases of the nervous system are discussed. A course is also given at the Baltimore City Hospitals, comprising eight periods of two hours each, in which the students in small groups carry out complete neurological examinations of selected cases which illustrate the chief neurological syndromes.

Fourth Year. A clinical conference one hour each week is given to the whole class at the University and Mercy Hospitals. All patients presented at these clinics are carefully examined. Complete written records are made by the students who demonstrate the patients before the class. The patients are usually assigned one or two weeks before they are presented, and each student in the class must study and present one or more patients during the year.

Ward Class Instruction. Nine hours of instruction are given to each student in small sections at the University and Mercy Hospitals. In these classes the students come in close personal contact with the patients in the wards under the supervision of the instructor.

Dispensary Instruction. Small sections are instructed in the dispensaries of the University and Mercy Hospitals five afternoons each week. In this way students are brought into contact with nervous diseases in their early and late manifestations.

HYGIENE AND PUBLIC HEALTH

Huntington Williams	Professor of Hygiene and Public Health
William H. F. Warthen	Assistant Professor of Hygiene and Public Health
Ross Davies	Assistant Professor of Hygiene and Public Health
Myron G. Tull	Instructor in Hygiene and Public Health

Third Year. A one-hour lecture is given to the whole class each Monday during both semesters. Basic instruction is afforded in the clinical and public health aspects of the communicable diseases including syphilis and tuberculosis. The lectures are under the auspices of the Department of Medicine and are given by staff members of that department, including physicians representing pediatrics, hygiene and public health, and the Baltimore City Health Department.

Fourth Year. Six one-hour lectures are given to the whole class at the beginning of the first semester and are on important public health procedures such as maternal and child hygiene, sewage disposal, vital statistics, interstate and international quarantine and research in public health. Elective work is also assigned at Sydenham Hospital, the one-hundred bed communicable disease hospital of the City Health Department, and at its Western Health District, 617 West Lombard Street, where the District Health Officer arranges for home visiting and the student prepares and presents a Home Survey Report.

The course deals with the fundamentals of public health and supplements the work in the third year. The major emphasis in both years is on the practice of preventive medicine and the relation of prevention to diagnosis and treatment, and on the civic and social implications of the medical services.

Note. Because of the acceleration of the wartime curriculum it has been necessary to discontinue temporarily the following instruction in the fourth year: (1) two-hour seminar periods for the whole class, in groups of ten to fifteen students on six Wednesday afternoons. These sessions enable the students themselves to prepare birth and death certificates and to understand a selected group of laboratory and sanitary procedures of a practical nature. (2) Four Wednesday afternoon field-inspection trips for each third of the class. These trips, under guidance of full time public health workers, include visits to the city water filtration plant, the sewage disposal plant, a milk pasteurization plant and bakery and an industrial plant which has an active program of hygiene.

LEGAL MEDICINE

Howard J. Maldeis	Associate Professor of Legal Medicine Chief Medical Examiner, Maryland

Third Year. This course embraces a summary of some of the following: Proceedings in criminal and civil prosecution, medical evidence and testimony, identity and its general relations, rape, criminal abortions, signs of death, wounds in their medico-legal relations, natural and homicidal death, malpractice, insanity, and medico-legal autopsies, including poisoning.

Total hours: 4.

DEPARTMENT OF SURGERY

ARTHUR M. SHIPLEY	Professor of Surgery
★WALTER D. WISE	Professor of Surgery
CHARLES REID EDWARDS	Professor of Surgery
ELLIOTT H. HUTCHINS	Professor of Surgery
PAGE EDMUNDS	Professor of Traumatic Surgery
CHARLES BAGLEY, JR.	Professor of Neurological Surgery
THOMAS B. AYCOCK	Professor of Clinical Surgery
F. L. JENNINGS	Professor of Clinical Surgery
★D. J. PESSAGNO	Professor of Clinical Surgery
FREDERICK B. MANDEVILLE	Professor of Clinical Surgery
★MONTE EDWARDS	Clinical Professor of Surgery
CHARLES A. REIFSCHNEIDER	Clinical Professor of Traumatic Surgery
RICHARD G. COBLENTZ	Clinical Professor of Neurological Surgery
EDWARD A. KITLOWSKI	Clinical Professor of Plastic Surgery
THOMAS R. CHAMBERS	Associate Professor of Surgery
R. W. LOCHER	Associate Professor of Clinical Surgery
EDWARD S. JOHNSON	Associate Professor of Surgery
N. CLYDE MARVEL	Associate Professor of Surgery
GRANT E. WARD	Associate Professor of Surgery
CYRUS F. HORINE	Associate Professor of Surgery
CHARLES W. MAXSON	Associate Professor of Surgery
★GEORGE H. YEAGER	Associate Professor of Surgery
★HENRY F. ULLRICH	Associate Professor of Orthopaedic Surgery
C. W. PEAKE	Associate Professor of Surgery
OTTO C. BRANTIGAN	Associate Professor of Surgery
H. F. BONGARDT	Assistant Professor of Surgery
★HARRY C. HULL	Assistant Professor of Surgery
I. O. RIDGELY	Assistant Professor of Surgery
JAMES W. NELSON	Assistant Professor of Surgery
★I. RIDGEWAY TRIMBLE	Assistant Professor of Surgery
★RICHARD T. SHACKELFORD	Assistant Professor of Surgery
SIMON H. BRAGER	Assistant Professor of Surgery
★MURRAY M. COPELAND	Assistant Professor of Surgery
THURSTON R. ADAMS	Assistant Professor of Surgery
RAYMOND F. HELFRICH	Associate in Surgery
E. EUGENE COVINGTON	Associate in Surgery
LUTHER E. LITTLE	Associate in Surgery
WILLIAM B. SETTLE	Associate in Surgery
★ARTHUR G. SIWINSKI	Associate in Surgery
WILLIAM F. RIENHOFF, JR.	Associate in Surgery
W. WALLACE WALKER	Associate in Surgery
WILLIAM R. JOHNSON	Instructor in Surgery
E. M. HANRAHAN	Instructor in Surgery

★Karl J. Steinmueller	Instructor in Surgery
J. Duer Moores	Instructor in Surgery
Calvin Hyman	Instructor in Surgery
Clyde F. Karns	Instructor in Surgery
George Govatos	Instructor in Surgery
★Daniel R. Robinson	Instructor in Surgery
★Joseph V. Jerardi	Instructor in Surgery
★Herbert E. Reifschneider	Instructor in Surgery
★George H. Brouillet	Instructor in Surgery
★Harry C. Bowie	Instructor in Surgery
★William M. Garlick	Instructor in Surgery
★Stuart G. Coughlan	Instructor in Surgery
Harold H. Burns	Instructor in Surgery
★John F. Schaefer	Instructor in Surgery
★Howard F. Kinnamon, Jr.	Instructor in Surgery
William R. Geraghty	Assistant in Surgery
Howard B. McElwain	Assistant in Surgery
A. V. Buchness	Assistant in Surgery
T. J. Touhey	Assistant in Surgery
Samuel H. Culver	Assistant in Surgery
Albert R. Wilkerson	Assistant in Surgery
L. T. Chance	Assistant in Surgery
Samuel McLanahan, Jr.	Assistant in Surgery
W. Allen Deckert	Assistant in Surgery
★Samuel E. Proctor	Assistant in Surgery
★Dwight M. Currie	Assistant in Surgery
Robert F. Healy	Assistant in Surgery
Herbert M. Foster	Assistant in Surgery
Robert F. Chenowith	Assistant in Surgery
★Donald B. Grove	Assistant in Surgery
★William S. Cheney	Assistant in Surgery
★Frederick W. Waknitz	Assistant in Surgery
★Clarence P. Scarborough	Assistant in Surgery
★Ernest W. Mack	Assistant in Surgery
★Hugh H. Trout, Jr.	Assistant in Surgery
★Henry L. Rigdon	Assistant in Surgery
★Oliver A. James	Assistant in Surgery
★Walter H. Gerwig, Jr.	Assistant in Surgery
★Robert C. Sheppard	Assistant in Surgery
★Henry A. Briele	Assistant in Surgery
★F. Ford Loker	Assistant in Surgery
Patrick C. Phelan, Jr.	Assistant in Surgery
★William B. Long	Assistant in Surgery
E. Roderick Shipley	Assistant in Surgery
Robert Z. Berry	Assistant in Surgery
Preston R. Cutler	Assistant in Surgery
James W. Hendrick	Assistant in Surgery
Raymond M. Cunningham	Assistant in Surgery

Instruction is given by means of lectures, laboratory work, recitations, dispensary work, bedside instruction, ward classes, and clinics. The work begins in the second year and continues throughout the third and fourth years.

The teaching is done in the anatomical laboratory, operative surgery laboratory, the dispensaries, wards, clinical laboratories and operating rooms of the University and Mercy Hospitals, and in the wards and operating rooms of the Baltimore City Hospitals.

SECOND YEAR

Topographic and Surgical Anatomy. The course is designed to bridge the gap between anatomy in the abstract and clinical anatomy as applied to the study and practice of medicine and surgery.

The teaching is done in the anatomical laboratory, and students are required to demonstrate all points, outlines, and regions on the cadaver. Underlying regions are dissected to bring out outlines and relations of structures.

Two lectures and two laboratory periods per week during the second semester. Drs. Brantigan, Covington, Walker and Settle.

Total hours: 96.

Principles of Surgery. This course includes history-taking, records of physical examinations and of operations and progress notes; the preparation of surgical dressings, suture materials and solutions. It includes inflammation, infections, ulcers, gangrene, fistulae and sinuses, hemorrhage, shock and tumors. Lectures and conferences, two hours per week for one semester, are given to the whole class. Dr. Aycock.

THIRD YEAR

General and Regional Surgery. Lectures, recitations and clinics on the principles of surgery and general surgery are given three hours a week to the whole class. Dr. C. R. Edwards.

The class is divided into groups and receives instruction in history-taking and surgical pathology under the supervision of the chief of the pathologic department of the Baltimore City Hospitals. Instruction is also given in surgical diagnosis and in general surgery at the bedside and in the classroom at this institution by Drs. Aycock, C. A. Reifschneider, Brantigan and Adams. Two hours per week are given in orthopaedic surgery by Dr. Voshell, chief of the orthopaedic service of this institution.

Operative Surgery. Two courses are given in operative surgery under the supervision of Dr. Peake assisted by Drs. Chenowith, Deckert, Govatos, Healy, Karns, W. R. Johnson, Hyman and Brager. The class is divided into sections and each section is given practical and individual work under the supervision of the instructors.

Fractures and Dislocations. This course consists of instruction in the various forms of fractures, dislocations and their treatment. There is a regular schedule of didactic lectures, which is supplemented by practical demonstrations in diagnosis and treatment.

Surgical Dispensary. Under supervision, the student takes the history, makes the physical examinations, attempts the diagnosis, and, as far as possible, carries out the treatment of the ambulatory surgical patients in the University and in the Mercy Hospitals. Mercy Hospital—Dr. Helfrich assisted by the whole dispensary staff. University Hospital—Drs. Little and Settle assisted by the whole dispensary staff.

FOURTH YEAR

Clinics. A weekly clinic is given at the Mercy and at the University Hospitals to one-half the class throughout the year. As far as possible this is a diagnostic clinic. Mercy Hospital—Dr. Hutchins. University Hospital—Dr. Shipley.

Surgical Pathology. At Mercy Hospital. Specimens from the operating room and museum are studied in the gross and microscopically in relation to the case history. 14 hours. Dr. Bongardt.

Surgery of the Chest. At Mercy Hospital. Operations and conferences. 14 hours. Dr. Rienhoff.

Traumatic Surgery. This course deals with operative and post-operative treatment of accident cases, with instructions as to the relationship between the state, the employee, the employer, and the physician's duty to each. One hour a week to sections of the class throughout the year. Dr. Edmunds.

Clinical Clerkship. This work includes the personal study of assigned hospital patients, under supervision of the staffs of the University and Mercy Hospitals, history-taking, and physical examination of patients, laboratory examinations, attendance at operations and observation of post-operative treatment.

Ward Classes. Ward-class instruction in small groups will consist of ward rounds, surgical diagnosis, treatment and the after-care of operative cases. Mercy Hospital—Drs. Hutchins, Blake, Bongardt, Nelson, Marvel, Maxson and Jennings. University Hospital—Drs. Shipley, Charles Reid Edwards, Aycock, Adams and Brantigan.

ANAESTHESIA

Mary J. O'Brien	Anaesthetist
Ruth Elliott	Anaesthetist

THIRD YEAR

Lectures are given on the general physiology of anaesthesia, with consideration of special physiology of each anaesthetic agent; methods of induction and administration of anaesthesia; factors influencing the selection of the anaesthetic and types of anaesthetic agents and the preparation and care of the anaesthetized patient.

The lectures are correlated with practical demonstrations during operative clinics at the Baltimore City Hospitals.

FOURTH YEAR

During operative clinics in both surgery and gynecology each student will be given practical instruction in the administration of anaesthetics and will be required to record such changes as take place in blood pressure, pulse and respiration.

DERMATOLOGY

Harry M. Robinson, Sr.	Professor of Dermatology
Francis A. Ellis	Assistant Professor of Dermatology
★Harry M. Robinson, Jr.	Associate in Dermatology
★Lester N. Kolman	Instructor in Dermatology
Lucile J. Caldwell	Instructor in Dermatology
Rollin C. Hudson	Assistant in Dermatology
★Mark Hollander	Assistant in Dermatology
★Benjamin Highstein	Assistant in Dermatology
★Solomon Tanenbaum	Assistant in Dermatology

A weekly clinic is given at University Hospital throughout the year. This course consists of demonstrations of the common diseases of the skin, and conferences, in addition to a number of lectures on the general principles of dermatology. Drs. Robinson and Ellis.

Dispensary instruction is given in the diagnosis and treatment of skin diseases at the University Hospital by Dr. Robinson and dispensary staff, and at Mercy Hospital by Dr. Ellis and dispensary staff.

Third year	15 hours
Fourth Year	49 hours
Total	64 hours

ORTHOPAEDIC SURGERY

Allen Fiske Voshell	Professor of Orthopaedic Surgery
Albertus Cotton	Professor of Orthopaedic Surgery
Compton Riely	Clinical Professor of Orthopaedic Surgery
Moses Gellman	Associate Professor of Orthopaedic Surgery
Harry L. Rogers	Associate Professor of Orthopaedic Surgery
★Henry F. Ullrich	Associate Professor of Orthopaedic Surgery
I. H. Maseritz	Instructor in Orthopaedic Surgery
John V. Hopkins	Assistant in Orthopaedic Surgery
★Jason H. Gaskell	Assistant in Orthopaedic Surgery
Milton J. Wilder	Assistant in Orthopaedic Surgery

Didactic, clinical, bedside and out-patient instruction is given to the fourth year at the University and Mercy Hospitals and Dispensaries, Kernan Hospital for Crippled Children at Dickeyville and Baltimore City Hospitals. Instruction is also given to the third year in small groups at the Baltimore City Hospitals.

Weekly lectures throughout the year present all phases of orthopaedic surgery except fractures; brief discussions and demonstrations of physical therapy are included.

Fourth year groups are given more intimate instruction biweekly at one of the above institutions; fracture cases are included here.

Third year	60 hours
Fourth year	90 hours
Total	150 hours

RHINOLOGY AND LARYNGOLOGY

Edward A. Looper	Professor of Rhinology and Laryngology
Waitman F. Zinn	Clinical Professor of Rhinology and Laryngology
Franklin B. Anderson	Associate Professor of Rhinology and Laryngology
W. Raymond McKenzie	Associate in Rhinology and Laryngology
Thomas R. O'Rourk	Associate in Rhinology and Laryngology
Cleo D. Stiles	Associate in Rhinology and Laryngology
Benjamin S. Rich	Associate in Rhinology and Laryngology
Fayne A. Kayser	Assistant in Rhinology and Laryngology
★Theodore A. Schwartz	Assistant in Rhinology and Laryngology
★William C. Humphries	Assistant in Rhinology and Laryngology
Frederick T. Kyper	Assistant in Rhinology and Laryngology
Samuel L. Fox	Assistant in Rhinology and Laryngology
John H. Hirschfeld	Assistant in Rhinology and Laryngology

Third Year. Instruction to whole class is given in the common diseases of the nose and throat, attention being especially directed to infections of the accessory sinuses, the importance of focal infections in the etiology of general diseases and modern methods of diagnosis. Lectures illustrated by lantern slides are given one hour weekly for seven weeks by Dr. Looper.

Fourth Year. Dispensary instruction is given for one and one-half hours daily, to small sections at the University and the Mercy Hospitals. The student is afforded an opportunity to study, diagnose and treat patients under supervision. Ward classes and clinical demonstrations are given in periods of one and one-half hours weekly throughout the session in the University and the Mercy Hospitals.

The Looper Clinic for bronchoscopy and esophagoscopy, recently established in the University Hospital, affords unusual opportunities for students to study diseases of the larynx, bronchi and esophagus. The clinic is open to students daily from 2 to 4 P.M. under direction of Dr. Looper.

The Mercy Hospital clinic for bronchoscopy and esophagoscopy is under the direction of Dr. Zinn. In these two clinics the etiology, symptomatology, diagnosis and treatment of foreign bodies in the air and food passages, as well as bronchoscopy, are taught to students as an aid in the diagnosis and treatment of diseases of the lungs.

Third year	9 hours
Fourth year	53 hours
Total	62 hours

GENITO-URINARY SURGERY

W. Houston Toulson	Professor of Genito-Urinary Surgery
Kenneth D. Legge	Professor of Clinical Genito-Urinary Surgery
Austin H Wood	Associate in Genito-Urinary Surgery
Lyle J. Millan	Associate in Genito-Urinary Surgery
L. K. Fargo	Associate in Genito-Urinary Surgery
John F. Hogan	Associate in Genito-Urinary Surgery
W. A. H. Councill	Associate in Genito-Urinary Surgery
★Harry S. Shelley	Associate in Genito-Urinary Surgery

Francis W. Gillis	Associate in Genito-Urinary Surgery
★Samuel T. Helms	Instructor in Genito-Urinary Surgery
★Howard B. Mays	Instructor in Genito-Urinary Surgery
★Hugh Jewett	Assistant in Genito-Urinary Surgery
Morris A. Fine	Assistant in Genito-Urinary Surgery

Third Year. This course is given for seven hours to the whole class. It consists of lectures and demonstrations, including the use of lantern slides and motion pictures. Dr. Toulson.

Fourth Year. The course in this year includes explanations and demonstrations of urethroscopy, cystoscopy, ureteral catheterization, renal function tests, urography, urine cultures and the various laboratory procedures. The teaching consists of clinics and ward rounds to small groups, and attendance by members of the senior class upon the out-patients in the dispensary. The student here is placed much on his own responsibility in arriving at a diagnosis. Members of the staff are in constant attendance for consultations. These dispensary classes are conducted at both the Mercy and University Hospitals where practically every variety of urogenital disease is seen and used for teaching purposes.

Third year	8 hours
Fourth year	64 hours
Total	72 hours

DISEASES OF THE RECTUM AND COLON

Charles F. Blake	Professor of Diseases of the Rectum and Colon
★Monte Edwards	Clinical Professor of Diseases of the Rectum and Colon
Thurston R. Adams	Associate in Diseases of the Rectum and Colon

Third Year. Seven lectures are given to the whole class. This course is for instruction in the diseases of the colon, sigmoid flexure, rectum and anus, and covers the essential features of the anatomy and physiology of the large intestine as well as the various diseases to which it is subject. Dr. Adams.

Fourth Year. Ward and dispensary instruction is given in the University and Mercy Hospitals, where different phases of the various diseases are taught by direct observation and examination. The use of the proctoscope and sigmoidoscope in the examination of the rectum and sigmoid is made familiar to each student. Mercy Hospital—Dr. Blake. University Hospital—Dr. Adams.

Third year	7 hours
Fourth year	16 hours
Total	23 hours

OTOLOGY

Thomas R. O'Rourk	Clinical Professor of Otology
Franklin B. Anderson	Associate Professor of Otology
Benjamin S. Rich	Associate in Otology
★William A. Parr	Assistant in Otology
Cleo D. Stiles	Assistant in Otology
Richard S. Owens	Assistant in Otology

The course in otology is planned to give a practical knowledge of the anatomy and physiology of the ear, and its proximity and relationship to the brain and other vital structures. The inflammatory diseases, their etiology, diagnosis, treatment and complications are particularly stressed, with emphasis upon their relationship to the diseases of children, head-surgery and neurology.

Third Year. The whole class is given instruction by means of talks, anatomical specimens and lantern slides.

Fourth Year. Small sections of the class receive instruction and make personal examinations of patients under the direction of an instructor. The student is urged to make a routine examination of the ear in his ward work in general medicine and surgery.

Third year	12 hours
Fourth year	40 hours
Total	52 hours

NEUROLOGICAL SURGERY

Charles Bagley, Jr.	Professor of Neurological Surgery
Richard G. Coblentz	Clinical Professor of Neurological Surgery
James G. Arnold, Jr.	Associate in Neurological Surgery
★William W. McKinney	Assistant in Neurological Surgery
John A. Wagner	Hitchcock Fellow in Neurological Surgery

Third Year. The course covers instruction in diagnosis and treatment of surgical conditions of the brain, spinal cord and the peripheral nerves. Drs. Bagley, Coblentz and Arnold.

Fourth Year. Weekly ward rounds and conferences are given at the University Hospital. Drs. Bagley, Coblentz and Arnold.

Third year	12 hours
Fourth year	30 hours
Total	42 hours

ONCOLOGY

J. Mason Hundley, Jr.	Professor of Gynecology
Grant E. Ward	Associate Professor of Surgery
Beverley C. Compton	Associate in Gynecology
John C. Dumler	Associate in Gynecology
★Murray M. Copeland	Associate in Surgery
E. Eugene Covington	Associate in Surgery
J. Duer Moores	Instructor in Surgery
★Ernest I. Cornbrooks, Jr.	Instructor in Gynecology
★Arthur G. Siwinski	Instructor in Surgery
William K. Diehl	Instructor in Gynecology
★Everett S. Diggs	Assistant in Gynecology

The purpose of the courses in Oncology is to give students training in the diagnosis and treatment of neoplastic diseases not obtained in other departments and at the same time to correlate this training with that received in surgery, medicine, roentgenology and other specialties.

Third Year: An out-patient clinic is held twice weekly, which affords an opportunity for instruction in small groups of students assigned in rotation from the general surgical and gynecological sections. The gynecological problems are under the supervision of Dr. Hundley and the general surgical conditions are under the direction of Dr. Ward.

In addition to dispensary work, five lectures in general oncology are given by Dr. Ward to the entire class at the end of the year. The increasing importance of the cancer problem throughout the State, Nation and civilized world is emphasized. An introduction to the history, physics and practical application of radium is given. The diagnosis and treatment, both surgical and radiological, of neoplasms of the head and neck, oral cavity, skin, breasts and hemopoietic system are also covered.

Fourth Year: Each ward class meets for one and one-half hours once a week for five weeks with Dr. Ward and staff for demonstration and discussion of patients with neoplastic diseases.

Dr. Hundley and staff give instructions in the diagnosis and treatment of cancer of the generative organs during the regular gynecological courses in addition to the above mentioned dispensary instruction.

Third year	8 hours
Fourth year	16 hours
Total	24 hours

ORAL SURGERY

★Brice M. Dorsey	Professor of Oral Surgery
Charles A. Reifschneider	Clinical Professor of Oral Surgery
Grant E. Ward	Associate Professor of Oral Surgery
William E. Hahn	Associate Professor of Oral Surgery
Vernon D. Kaufman	Associate Professor of Oral Surgery
J. Herbert Wilkerson	Assistant Professor of Oral Surgery
★Herbert E. Reifschneider	Instructor in Oral Surgery
Conrad L. Inman	Instructor in Oral Surgery
★B. Wallace Inman	Instructor in Oral Surgery
Dorsey R. Tipton	Instructor in Oral Surgery

This section in the Department of Surgery is established for the teaching of both medical and dental students. A new subdivision in the dispensary has also been established. Beds will be provided in the University Hospital for the care of patients who will be available for the teaching of students from both schools.

Senior year: clinics weekly.

Ward instruction and group teaching are given. This includes diagnosis and treatment of diseases of the face, mouth and jaws.

INDUSTRIAL MEDICINE AND SURGERY

Page Edmunds	Professor of Traumatic Surgery
G. Carroll Lockard	Professor of Clinical Medicine
Charles A. Reifschneider	Clinical Professor of Traumatic Surgery
Thurston R. Adams	Associate in Surgery

This section is under the combined supervision of the medical and surgical departments. It is a cooperative effort by members of the medical school and hospital staff to afford means for clinical and laboratory study of the patient who has been subjected to traumatic or medical industrial hazard, so that adequate care may be instituted to promote his physical well-being. The facilities of the laboratories of the medical school and hospital are available as required.

Under direction of this department limited undergraduate instruction is given, especially in the methods of examination and of keeping records and in the general medico-legal principles as they affect the industrial employee, the employer, the general insurers, the physician and the hospital. There is also instruction on methods of making life insurance and other physical examinations, whether for employment or for health purposes. The wards of the University, Mercy and Baltimore City Hospitals provide for bed-side instruction.

Total hours: 48.

FIRST AID INSTRUCTION

This course was added to the curriculum in 1942. Instruction consists of lectures combined with practical demonstrations and actual practice by students for two (2) hours every week for ten (10) weeks during the second semester of the Freshman Year.

PLASTIC SURGERY

Edward A. Kitlowski	Clinical Professor of Plastic Surgery

This course is designed to acquaint students with the problems of reconstructive and plastic surgery. A subdivision in the dispensary has been established and beds for patients will be available for instruction in this course at the University and Baltimore City Hospitals and Kernan's Hospital for Crippled Children.

Third Year. Five lectures are given to the whole class. Dispensary instruction is provided on Mondays and Fridays.

Fourth Year. Ward rounds and operative demonstrations are held at the hospitals.

DEPARTMENT OF OBSTETRICS

Louis H. Douglass	Professor of Obstetrics
J. McFarland Bergland	Associate Professor of Obstetrics
Emil Novak	Associate Professor of Obstetrics
J. G. M. Reese	Associate Professor of Obstetrics
M. Alexander Novey	Assistant Professor of Obstetrics
Isadore A. Siegel	Assistant Professor of Obstetrics
★John E. Savage	Associate in Obstetrics
Margaret B. Ballard	Associate in Obstetrics
Dudley P. Bowe	Associate in Obstetrics
Hugh B. McNally	Associate in Obstetrics
★Frank K. Norris	Instructor in Obstetrics
D. McClelland Dixon	Instructor in Obstetrics
D. Frank Kaltreider	Instructor in Obstetrics
★Kenneth B. Boyd	Assistant in Obstetrics

W. Allen Deckert	Assistant in Obstetrics
Jaroslav Hulla	Assistant in Obstetrics
Maxwell L. Mazer	Assistant in Obstetrics
Ferd. E. Kadan	Assistant in Obstetrics
J. Edward Norris	Assistant in Obstetrics
★Jacob R. Jensen	Assistant in Obstetrics
★J. Warren Albrittain	Assistant in Obstetrics
★W. Kenneth Mansfield, Jr.	Assistant in Obstetrics
★George H. Davis	Assistant in Obstetrics
★Daniel I. Dann	Assistant in Obstetrics
★Charles H. Doeller, Jr.	Assistant in Obstetrics
★J. King B. E. Seegar, Jr.	Assistant in Obstetrics
★L. Calvin Gareis	Assistant in Obstetrics
★Schuyler G. Kohn	Assistant in Obstetrics
★John H. Morrison	Assistant in Obstetrics
Oscar Hartman	Assistant in Obstetrics
Melvin D. Kappelman	Assistant in Obstetrics
Jones B. Ballina	Assistant in Obstetrics
William A. Mitchell	Assistant in Obstetrics
Alma Braun-Kelly	Assistant in Obstetrics

Third Year. The lectures and recitations consisting of three hours' teaching weekly are designed to cover the anatomy of the female generative tract and the bony pelvis, the physiology and development of the ovum and the physiology of pregnancy and labor. Following this the pathology of pregnancy, labor and the puerperium are taken up. Drs. Douglass, Novak, Reese, Siegel and Kaltreider.

Each student spends time during his junior year at the Baltimore City Hospitals observing, assisting and finally delivering patients under strict supervision. Each student sees about twenty deliveries there, and does a considerable amount of the routine work.

The junior students are assigned as assistants to the seniors in the home delivery service and accompany them on deliveries.

Each student receives, in small groups, ten hours of instruction in palpation of patients and mensuration of the pelvis and demonstrations of the mechanism of labor. Drs. Siegel and McNally.

Fourth Year. At the weekly clinical conference, cases are presented and discussed and the student body is encouraged to offer opinions and to ask questions. There is no didactic teaching done, and an earnest effort is made to keep it, in every sense of the word, a conference. Dr. Douglass.

The ward classes are held twice weekly for five weeks for each group. Various subjects are assigned and discussed, patients and their histories are presented. Drs. Reese, Novey and McNally.

Manikin instruction is given once a week. Drs. Dixon and Kaltreider.

During the same five-week period, the students are sent into patients' homes to conduct deliveries under supervision of a senior member of the house staff and with the assistance of a graduate nurse. The student is held responsible for the complete conduct of each assigned case.

Each student spends thirty hours in the prenatal clinic, taking histories and examining patients under supervision.

Finally, the students are invited to attend the monthly meetings of The Committee on Maternal Mortality, where all maternal deaths occurring in Baltimore are openly discussed. *Hours*—Third year—148; Fourth year—102; total—250.

DEPARTMENT OF GYNECOLOGY

J. Mason Hundley, Jr.	Professor of Gynecology
Thomas K. Galvin	Clinical Professor of Gynecology
Leo Brady	Assistant Professor of Gynecology
George A. Strauss, Jr.	Assistant Professor of Gynecology
Edward P. Smith	Assistant Professor of Gynecology
John T. Hibbitts	Associate in Gynecology
★Kenneth B. Boyd	Associate in Gynecology
John C. Dumler	Associate in Gynecology
Beverley C. Compton	Associate in Gynecology
Houston Everett	Associate in Gynecology
J. J. Erwin	Associate in Gynecology
Thomas S. Bowyer	Instructor in Gynecology
Ernest S. Edlow	Instructor in Gynecology
W. Allen Deckert	Instructor in Gynecology
★Frank K. Morris	Instructor in Gynecology
★Ernest I. Cornbrooks, Jr.	Instructor in Gynecology
William B. Settle	Instructor in Gynecology
William K. Diehl	Instructor in Gynecology
★H. L. Granoff	Assistant in Gynecology
Helen I. Maginnis	Assistant in Gynecology
★Everett S. Diggs	Assistant in Gynecology
★Roland E. Bieren	Assistant in Gynecology
John S. Haught	Assistant in Gynecology

Third Year. A course of thirty lectures and recitations is given to the whole class. In addition, a short course of lecture-demonstrations is given at the Baltimore City Hospitals, consisting of eight periods of one hour each, in which small groups of students are instructed in the fundamentals of gynecological diagnosis and examination.

Fourth Year. Operative clinics—lectures and demonstrations—are given six hours per week, for five weeks, to sectious of the class.

Instruction in female urology is given. A small number of students may attend the cystoscopic dispensary which is held twice weekly.

The course in gynecology also includes instruction in the diagnosis and treatment of cancer of the generative organs. Small groups of students attend the oncological dispensary for additional work.

Third year	38 hours
Fourth year	74 hours
Total	112 hours

DEPARTMENT OF OPHTHALMOLOGY

Clyde A. Clapp	Professor of Ophthalmology
H. K. Fleck	Clinical Professor of Ophthalmology
Henry F. Graff	Assistant Professor of Ophthalmology
Jonas Friedenwald	Lecturer in Ophthalmic Pathology
Joseph I. Kemler	Associate in Ophthalmology
F. Edwin Knowles, Jr	Associate in Ophthalmology
★F. A. Holden	Instructor in Ophthalmology
Milton C. Lang	Instructor in Ophthalmology
★A. Kremen	Instructor in Ophthalmology
★Jerome Snyder	Assistant in Ophthalmology
★Marion H. Gillis	Assistant in Ophthalmology

Third Year. Second semester. Dr. Graff reviews the anatomy and physiology of the eye and discusses the methods used in making the various examinations. Errors of refraction and their effect upon the general system are explained. Weekly section work, demonstrating the use of the ophthalmoscope, is carried on during the entire session.

Fourth Year. Clinics and demonstrations are given in diseases of the eye, weekly, for one year. Dr. Clapp.

This course consists of lectures upon the diseases of the eye, with particular reference to their diagnosis and relation to general medicine. Special lectures will be given upon vascular changes in the eye and upon the pathology of the eye. Some operations will be demonstrated by motion pictures.

Weekly ward classes are held at the University, The Baltimore Eye, Ear and Throat and Mercy Hospitals during which the eye grounds in the various medical and surgical conditions are demonstrated. Also daily demonstrations are given in the taking of histories and the diagnosis and treatment of the various conditions as seen in the dispensary. Drs. Kemler, Graff and Knowles.

Third year	20 hours
Fourth year	104 hours
Total	124 hours

DEPARTMENT OF ROENTGENOLOGY

★Walter L. Kilby	Acting Professor of Roentgenology
Albertus Cotton	Professor of Roentgenology
Charles N. Davidson	Assistant Professor of Roentgenology
Donald J. Barnett	Assistant in Roentgenology

During the academic year small groups of the fourth year class are given weekly instruction in the diagnostic and therapeutic uses of the Roentgen rays. An effort is made to familiarize the student with the indications for and limitations of Roentgen ray examinations. The history, physics and practical application of Roentgen rays are alluded to but not stressed. Conferences are held with the various departments during the school year which are also open to members of the fourth year class.

Total hours: 96.

HISTORY OF MEDICINE*

★Louis A. M. Krause............................Associate Professor of Medicine

Beginning with the spring of 1942 a group of lectures on the history of medicine has been presented on selected phases and trends of the development of medical knowledge and practice. It is planned to avoid duplication of subject matter for at least four years.

These lectures are offered primarily for our students, but a cordial invitation is extended to anyone who may wish to attend.

Announcement of the lectures will be made by mail and on the bulletin board of the School of Medicine.

ART AS APPLIED TO MEDICINE

★Carl Dame Clarke...............Associate Professor of Art as Applied to Medicine
Amelia R. Cohen..Acting Director

This department is maintained for the purpose of supplying pictorial and plastic illustrations for visual teaching in the classrooms of the medical school and for publication in scientific periodicals.

Special courses of instruction are given to qualified students during peacetime.

ELEMENTARY BIOMETRICS

James C. Munch.........................Lecturer in Elementary Biometrics

A course in the application of statistical methods to the treatment of clinical and laboratory data designed to aid in the interpretation of scientific research reports.

First Year.. 16 hours

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* These lectures have been suspended during the emergency.

FIRST YEAR SCHEDULE

FIRST SEMESTER, SEPTEMBER 20, 1945 TO JANUARY 26, 1946

Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
9.00 to 12.00	*Histology and Embryology 11–12 lecture *Bressler 2*			*Histology and Embryology 11–12 lecture *Bressler 2*		Gross Anatomy
12.00 to 1.00	Lunch					
1.00 to 5.00	Gross Anatomy Lectures and Laboratories *Bressler 1*					

* Course begins October 4.

SECOND SEMESTER, JANUARY 28 TO MAY 25, 1946

Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
9.00 to 12.00	Laboratory — Biol. Chem. Sect. A Psychiatry Sect. B *S-P* (10–12)	Laboratory — Biol. Chem. Sect. B Psychiatry Sect. A *S-P* (10–12)	Laboratory — Biol. Chem. Sect. A	Laboratory — Biol. Chem. Sect. B	Neuro-Anatomy Laboratory Lecture—11-12 Br. 2	Neuro-Anatomy Laboratory Lecture—11-12 Br. 2
12.00 to 1.00	Transfer and Lunch	Transfer and Lunch	Lunch	Lunch	Lunch	
1.00 to 2.00			Biol. Chem. *Adm. 1*	Biol. Chem. *Adm. 1*	Biol. Chem. *Adm. 1*	
2.00 to 3.00	Biol. Chem. *Adm. 1*	Biol. Chem. *Adm. 1*	Biol. Chem. Conference *Adm. 1*	Gross Anatomy Adm. 1 Feb. 14 to Apr. 4 — Neuro-Anatomy Apr. 11 Laboratory	Biol. Chem. Conference *Adm. 1*	
3.00 to 5.00	3-4 Biometrics Adm. 1	Gross Anatomy Adm. 1 Feb. 12 to Apr. 2			(3-5) First Aid C. H. February 1 to March 29	

Locations of Lecture Halls and Laboratories:

Adm. 1—First Floor, Administration Building, Lombard and Greene Streets.
A. H.—Anatomical Hall—Upper Hall, N. E. Cor. Lombard and Greene Streets.
C. H.—Chemical Hall, Lower Hall, N. E. Cor. Lombard and Greene Streets.
Biological Chemistry Laboratory—Third Floor, 31 South Greene Street.
Bressler Research Laboratory—29 S. Greene Street.
  Gross Anatomy—First Floor.
  Histology and Embryology—Second Floor.
  Neuro-anatomy—Second Floor.
S-P—The Sheppard and Enoch Pratt Hospital, Towson. (Take car No. 8. Get off at Cedar Avenue. Fifteen-minute walk to main building.)

Mid-Year Examinations—January 21-26, 1946
Final Examinations—May 20-25, 1946

SECOND YEAR SCHEDULE

FIRST SEMESTER, JULY 19, 1945 TO NOVEMBER 10, 1945

Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
8.30 9.30	Physiology *Bressler 2*	Physiology *Bressler 2*	Medicine *Bressler 2*	Physiology *Bressler 2*	Physiology *Bressler 2*	
9.30 to 10.30	Physiology Conference *Bressler 2*	Bacteriology *Adm. 1*	Physiology *Bressler 2*	Pharmacology *Bressler 2*	Pharmacology *Bressler 2*	
10.30 to 12.30	†Bacteriology Laboratory				Psychiatry *C. H.* Neurological Diagnosis *C. H.*	
12.30	Lunch					
1.00 to 5.00	Pharm. Lect. (1-2) *Bressler 2* Pharmacology *B* Physiology *A*	Laboratory *A* Laboratory *B*	Elective	Pharmacology *B* Physiology *A*	Laboratory (1 to 4) *A* Laboratory *B*	

† Bacteriology Laboratory—Section work during the last month.

SECOND SEMESTER, NOVEMBER 12, 1945 TO MARCH 22, 1946

Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
8.30 to 9.30	Surgery *Bressler 2*	Surgery *Bressler 2*	Surgical Anatomy *Bressler 2*		Physical Diagnosis *Adm. 1* 4 lectures	
9.30 to 10.30	Pharmacology *Bressler 2*	Pharmacology *Bressler 2*	Surgical Anatomy Laboratory *Bressler 1*	9–10 Medical Clinic *Amp.*	Pharmacology *Bressler 2*	
10.30 to 11.30	Pathology *C. H.*	Pathology *C. H.*		Pathology *C. H*	Pathology *C. H.*	
11.30	Lunch					
12.00 to 2.00	Pathology Laboratory	Pathology Laboratory	Immunology Laboratory	Pathology Laboratory	Pathology Laboratory	
2.00 to 3.00	Surgical Anatomy *Bressler 2*	‖Immunology Laboratory		Pharmacology Laboratory *Sect. A*	Pharmacology Laboratory *Sect. B*	
3.00 to 5.00	Surgical Anatomy Laboratory *Bressler 1*		Optional period Pathology Immunology	Physical Diagnosis *Sect. B* (3.00–5.00) *U. H. D.*	Physical Diagnosis *Sect. A* (3.00–5.00) *U. H. D.*	

‖ Immunology Laboratory—Section work during last two months.

Locations of Lecture Halls and Laboratories:

Adm. 1—First floor, Administration Building, Lombard and Greene Streets.
C. H.—Chemical Hall, Lower Hall, Lombard and Greene Streets.
Amp.—Wilson Memorial Amphitheatre, New University Hospital, Greene and Redwood Streets, Eighth Floor.
U. H. D.—University Hospital Dispensary, Old Hospital Building.

Laboratories:

Physiology, Pharmacology, Surgical Anatomy—Bressler Building.
Bacteriology, Immunology, Pathology, Second Floor, 31 S. Greene Street.

Mid-Year Examinations—November 5-10, 1945

Final Examinations—March 11-16, 1946

THIRD YEAR SCHEDULE
JULY 19, 1945 TO MARCH 22, 1946

SCHEDULE 1

<table>
<tr><th>Hours</th><th>Monday</th><th>Tuesday</th><th>Wednesday</th><th>Thursday</th><th>Friday</th><th>Saturday</th></tr>
<tr><td>8.30
to
9.20</td><td>(Whole Class)
Obstetrics
<i>C. H.</i>
†Gynecology
Feb. 4 to
Feb. 25</td><td>(Whole Class)
Surgery
<i>C. H.</i></td><td>(Whole Class)
Obstetrics
<i>C. H.</i>
†Gynecology
Feb. 6 to
Feb. 27</td><td>(Whole Class)
Surgery
<i>C. H.</i></td><td>(Whole Class)
Pathology
<i>C. H.</i></td><td>(Whole Class)
Surgery
<i>C. H.</i>
†Gynecology
Nov 17 to
Mar. 2</td></tr>
<tr><td>9.20
to
10.00</td><td colspan="6">Transfer to Baltimore City Hospitals</td></tr>
<tr><td>10.00
to
12.00</td><td colspan="6">Physical Diagnosis, Pathology, Neurology and Pediatrics at B. C. H.</td></tr>
<tr><td>12.00
to
1.00</td><td>Transfer
and
Lunch</td><td>Transfer
and
Lunch</td><td>Lunch</td><td>Transfer
and
Lunch</td><td>Lunch</td><td rowspan="4"></td></tr>
<tr><td>1.00
to
2.00</td><td>(Whole Class)
Otology,
Nose & Throat,
Urology,
Proctology,
Plastic Surgery
<i>C. H.</i></td><td>(Whole Class)
*Gynecology
†Eye—10 wks.
Nov. 13 to
Jan. 22
†Oncology
—5 wks.
Jan. 29 to
Feb. 26
<i>C. H.</i></td><td>Medical
Clinic
<i>B. C. H.</i></td><td>(Whole Class)
Clinical
Pathology
<i>Bressler 2</i></td><td>Obstetrical
Clinic
<i>B. C. H.</i></td></tr>
<tr><td>2.00
to
4.00</td><td colspan="2">(Whole Class)
Pathology Laboratory
<i>31</i></td><td>Surgery
—
Pediatrics</td><td rowspan="2">(Whole Class)
Clinical
Pathology
—
Laboratory
<i>Bressler 5</i></td><td>Surgery
—
Pediatrics</td></tr>
<tr><td>4.00
to
5.00</td><td>(Whole Class)
Hygiene and
Public Health
<i>C. H.</i></td><td>(Whole Class)
*Physical
Diagnosis,
†Psychiatry,
†Legal Medicine
<i>C. H.</i></td><td>Orthopaedics
(Subgroup of
Surgery Group)
<i>B. C. H.</i></td><td>Orthopaedics
(Subgroup of
Surgery Group)
<i>B. C. H.</i></td></tr>
</table>

* First Semester. † Second Semester.

THIRD YEAR SCHEDULE

JULY 19, 1945 TO MARCH 22, 1946

SCHEDULE 2

Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
8.30 to 9.20	Same as Schedule 1					
9.35 to 10.20	Pediatrics *C. H.*	Medicine *C. H.*	Medicine *C. H.*	Therapeutics *C. H.*	Medicine *C. H.*	Neurology *C. H.*
10.30 to 12.30	Operative Surgery—*Bressler 6* Medical and Surgical Dispensaries—(Univ. and Mercy Sections)					
12.30 to 1.00	Lunch					
1.00 to 2.00	Same as Schedule 1		Medical Clinic *Amp.*	Same as Schedule 1	Psychiatry (9 weeks) Dermatology (6 weeks) N.B.—The whole section reports to psychiatry for first three weeks, then subdivides. *Br. 2* for first 3 wks. U. H. Disp. Last 12 wks.	
2.00 to 4.00			Ophthalmoscopy (5 weeks) *B. E. H.* — Obstetrics (5 weeks) Univ. Hosp. Disp. — Otology (5 wks.) *Univ. Hosp.* *3-C*			
4.00 to 5.00					Obstetrics *Br. 2*	

The Junior Class will be divided into two sections—A and B. Each section reports to classes in keeping with the following schedule assignment, in which the letters represent the class sections and the numerals indicate the schedules to be followed for the 15-week periods shown.

Schedule Assignment

Periods	*Sections and Schedules*
July 19, 1945 to November 3, 1945	A-1, B-2
November 12, 1945 to March 2, 1946	B-1, A-2

Locations of Lecture Halls, etc.

A. H.—Anatomical Hall, Upper Hall, N. E. Cor. Lombard and Greene Streets.
Amp.—Wilson Memorial Amphitheatre, New University Hospital, Eighth Floor.
B. C. H.—Baltimore City Hosps., 4940 Eastern Ave.
B. E. H.—Baltimore Eye, Ear and Throat Hospital, 1214 Eutaw Place.
Bressler—Bressler Building, 29 S. Greene Street.
C. H.—Chemical Hall, Lower Hall, N. E. Cor. Lombard and Greene Streets.
Univ. Hosp.—New University Hospital, Greene and Redwood Streets.
U. H. Disp.—Old Hospital Building, S. W. Cor. Lombard and Greene Streets.
31—31 South Greene Street.
Clinical Pathology Laboratory—Fifth Floor, Bressler Building.
Pathology Laboratory—31 South Greene Street, Special Rooms, Basement.

Mid-Year Examinations—November 5-10, 1945

Final Examinations—March 4-16, 1946

FOURTH YEAR SCHEDULE

JULY 19, 1945 TO MARCH 22, 1946

Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
9.00 to 11.00	Ward Classes — (a) Medicine (a) Surgery (b) Obstetrics (d) Pediatrics	Ward Classes — (a) Medicine (a) Surgery (b) Gynecology (c) Gynecology	Ward Classes — (a) Medicine (a) Surgery (b) Obstetrics (d) Pediatrics	Ward Classes — (a) Medicine (a) Surgery (b) Gynecology (c) Gynecology	Ward Classes — (a) Medicine (a) Surgery (b) Obstetrics (d) Pediatrics	Ward Classes — (a) Medicine (a) Surgery (b) Gynecology (d) Pediatrics
11.00 to 12.00	Orthopaedic Surgery *Univ. Sec. Amp.* *P. & S. Sec. 51*	Ward Work *Univ. Sec.* Surgical Pathology *P. & S. Sec. 40*	Clinical Pathological Conference *Univ. Sec. Amp.* *P. & S. Sec. 34*	Surgical Clinic *Univ. Sec. Amp.* *P. & S. Sec. 51*	Medical Clinic *Univ. Sec. Amp.* *P. & S. Sec. 34*	Pediatric Clinic *Univ. Sec. Amp.* *P. & S. Sec. 34*
12.00 to 2.00	Dispensary, Lunch	Dispensary, Lunch	Dispensary, Lunch	Dispensary, Lunch	Dispensary, Lunch	Dispensary
2.15 to 3.15	Dermatology Clinic 1st time Full Class *Amp.* thereafter University Dispensary	Neurology Clinic *Univ. Sec. Amp.* *P. & S. Sec. 34*	Eye and Ear Clinic (Full Class at Univ. Hosp.) *Amp.*	Obstetrical Clinic (Full Class at Univ. Hosp.) *Amp.*	Hygiene and Public Health July 20 to Aug. 24 Tropical Medicine Aug. 31 (Full Class at Univ. Hosp.) *Amp.*	
3.30 to 5.00	*P. & S. Sect.* and *Univ. Sect.* Ward Classes	*P. & S. Sect.* Ward Classes	*P. & S. Sect.* Ward Classes	*P. & S. Sect.* Ward Classes	*P. & S. Sect.* Ward Classes	
		Medicine	G. I.	Medicine	Neurology	Medical Section
		Orthopaedics	Ward Work	Ward Work	Nose and Throat	Surgical "
		Pediatrics	Public Health	Pediatrics *Amp.*	Psychiatry *Amp.*	Special "
3.30 to 5.00	See special schedule Medical School bulletin board	*Univ. Sect.* Ward Classes	*Univ. Sect.* Ward Classes	*Univ. Sect.* Ward Classes	*Univ. Sect.* Ward Classes	
		Medicine		Therapeutics	Neurology	Medical Section
		Proctology	Urology *Amp.*	Nose and Throat	Orthopaedic Surgery (*Kernan Hospital*)	Surgical "
		Oncology (3.30–4.30) *Amp.*	Eye and Ear		Psychiatry *Amp.*	Special "

(a)—Univ. and P. & S. Sections.
(b)—Univ. Section.
(c)—Whole P. & S. special group.
(d)—P. & S. special group, divided attendance at Univ. and P. & S.

University Sections on Medicine and Gynecology report at 8.30.

The Senior Class is divided into two sections, which report, one at Lombard and Greene Streets, the other at Calvert and Saratoga Streets for one semester each, then rotate.

Each section of the class is divided into three groups—Medical, Surgical, and Special. These groups will rotate on the following dates:

First Semester		*Second Semester*	
1st period	July 19–Aug. 22	1st period	Nov. 12–Dec. 14
2nd period	Aug. 23–Sept. 28	2nd period	Dec. 15–Jan. 26
3rd period	Sept. 29–Nov. 3	3rd period	Jan. 28–Mar. 2

C. H.—Chemical Hall—N. E. Cor. Lombard and Greene Streets.
Amp.—Wilson Memorial Amphitheatre—New University Hospital.
P. & S., 34—Second floor, Calvert and Saratoga Streets.
P. & S., 40, 51—Fourth floor, Calvert and Saratoga Streets.

Univ. Section Dispensary schedule posted in Old Hospital Bldg.
P. & S. Section—obtain special schedule at Mercy Hospital.

Mid-Year Examinations—November 5–10, 1945

Final Examinations—March 4–9, 1946

UNIVERSITY OF MARYLAND SCHOOL OF MEDICINE AND COLLEGE OF PHYSICIANS AND SURGEONS

GRADUATES, SEPTEMBER 29, 1944

Alvarez, José Alberto......Puerto Rico
Anchell, Melvin, B.S...........Maryland
Ardinger, Joseph Stanley, Jr., B.S. Maryland
Bacon, Arthur Maynard, Jr., B.S. Maryland
Bell, Houston Lesher, B.S.......Maryland
Bloxom, John Madison, III, B.S. Maryland
Brady, Charles Eldon, A.B. North Carolina
Brady, Frank Joseph, B.S.......Maryland
Brandes, Herbert Gibbs, B.S. District of Columbia
Brill, Warren, Daniel, B.S.......Maryland
Brown, Richard James, B.S...Connecticut
Buckey, Robert Bruce, A.B.....Maryland
Callahan, Daniel Harry, Jr., B.S. Massachusetts
Carr, Charles Edwin, Jr., B.S....Maryland
Chaput, Charles Dupré, A.B. Massachusetts
Cintrón, Miguel...........Puerto Rico
Cloninger, Rowell Connor, A.B. North Carolina
Copeland, Herbert Bernard, Jr. West Virginia
Cowley, R. Adams.............Utah
Dodd, Patricia, B.S.............Georgia
Doukas, James A., B.S.........Maryland
Drake, Miles Edward, B.S., M.S., Ph.D. Maryland
Ebeling, William Carl, III, B.S..Maryland
Elias, Thomas Glenn, A.B......Maryland
Everett, John Thomas, B.S.....Maryland
Farkas, Robert William, A.B. Pennsylvania
Feaster, James Henry, Jr., A.B. West Virginia
Feldman, Maurice, Jr., A.B.....Maryland
Foard, Wilbur Harper..........Maryland
Futterman, Perry, A.B.........Maryland
García y García, José Antonio, B.S. Puerto Rico
Gassaway, Franklyn Drennan, B.S. Arizona
Godlove, John Carlton, A.B.....Maryland
Goldstein, Marvin, A.B.........Maryland
Grumbine, Francis Levine, A.B..Maryland
Guthrie, William Wilkinson, A.B. West Virginia
Guy, Ernest Gordon, B.S...North Carolina
Hamill, James Edward, B.S.....Maryland
Hayden, Richard Carroll, B.S...Maryland
Herold, Paul Garmer...........Maryland
Hobelmann, Charles Frederick, A.B. Maryland
Holljes, Henry Wirt Duvall, A.B. Maryland
Horn, Helen Amelia, A.B.......Maryland
Houska, Henry John, A.B.......Maryland
Ingram, Phyllis Ray, B.S.......Maryland
Ingram, William Braxton, B.S. North Carolina
Jernigan, John Mayo, Jr........Maryland
Jones, Bobby Lee, B.S..........Maryland
Kishpaugh, Marjorie Bird, B.S. Pennsylvania
Kreis, George Joseph, Jr........Maryland
Lambert, Herman James, Jr., B.S. Georgia
Lampley, William Askew, B.S. North Carolina
Lerman, Philip H..............Maryland
Levine, Stuart Charles, B.S.....Maryland
Lilienfeld, Abraham Morris, A.B. Maryland
Littlefield, James Beaton, A.B. Massachusetts
Maxwell, George Alexander, Jr., B.S. Maryland
Milloff, Bernard, B.S...........Maryland
Mintzer, Donald Willis, B.S...New Jersey
Morrow, Thomas Lacy, Jr., B.S. District of Columbia
Mosberg, William Henry, Jr., B.S. Maryland
Norment, Richard Baxter, III, B.S. Maryland
O'Donnell, Charles Francis.....Maryland
Osborne, William Wilson......Georgia
Patterson, Carl Norris, B.S......Maryland
Pierpont, Edwin Lowell, B.S....Maryland
Pool, Champe Clark, A.B...West Virginia
Pratt, Louis John, B.S..........Maryland
Ramundo, Michael Raymond, A.B. New Jersey
Randolph, Edward Burl, A.B. West Virginia
Rees, David Thomas, A.B...Pennsylvania
Riley, Eugene John, B.S........Maryland
Robbins, Morris Allen, A.B...New Jersey
Rolfes, Harry Franklin, B.S.....Maryland
Rubenstone, Albert Irving, A.B..Maryland
Scavone, Edmond. B.S..........Maryland
Schwartz, Aaron David, A.B...New York
Seabright, Howard Lee, A.B. West Virginia
Shaw, Charles Edward, Jr., B.S..Maryland
Simons, George Murray, B.S....Maryland
Spelsberg, Walter Karl, B.S. West Virginia
Steinberg, Stanley Herbert, B.S. District of Columbia

Stichel, Frederick Louis, Jr., B.S. Maryland
Taylor, Sarah Alice, B.S.. . North Carolina
Thompson, Lewis Bradford Massachusetts
Tinker, Francis Paul, B.S. . . . . . . Maryland
Traband, Millard Tolson, Jr. . . . . Maryland
Turner, Roy Byron, Jr., B.S. District of Columbia
Ullsperger, John Francis, A.B. . . . Maryland
Wehling, Benjamin Bird, B.S. . . . . Ohio
Wilkens, Kenneth Worth, B.S. North Carolina
Wilson, Mary Stuart, A.B. . . . . . . Maryland
Wooden, Allen Curtis, B.S. . . . . . Maryland
Woodrum Olin Cain . . . . Maryland
Wright, Isaac Clark, B.S. North Carolina
Yaffe, Stanley Norman, B.S. . . . . Maryland

HONORS

University Prize Gold Medal

William Carl Ebeling, III

Certificates of Honor

Miles Edward Drake
Marvin Goldstein
Herman James Lambert, Jr.
Maurice Feldman, Jr.
Lewis Bradford Thompson

INTERNSHIPS—GRADUATES OF SEPTEMBER 29, 1944

October 1, 1944–June 30, 1945

Alvarez, José Alberto	St. Agnes' Hospital, Baltimore, Md.
Anchell, Melvin	Sinai Hospital, Baltimore, Md.
Ardinger, Joseph Stanley	South Baltimore General Hospital, Baltimore, Md.
Bacon, Arthur Maynard, Jr.	St. Joseph's Hospital, Baltimore, Md.
Bell, Houston Lesher	Mercy Hospital, Baltimore, Md.
Bloxom, John Madison, III	South Baltimore General Hospital, Baltimore, Md.
Brady, Charles Eldon	City Hospital, Winston-Salem, N. C.
Brady, Frank Joseph	Maryland General Hospital, Baltimore, Md.
Brandes, Herbert Gibbs	Central Dispensary and Emergency Hospital, Washington, D. C.
Brill, Warren Daniel	Gallinger Municipal Hospital, Washington, D. C.
Brown, Richard James	Bridgeport Hospital, Bridgeport, Conn.
Buckey, Robert Bruce	Sacred Heart Hospital, Spokane, Wash.
Callahan, Daniel Harry, Jr.	Worcester City Hospital, Worcester, Mass.
Carr, Charles Edwin, Jr.	St. Agnes' Hospital, Baltimore, Md.
Chaput, Charles Dupré	University Hospital, Baltimore, Md.
Cintrón, Miguel	Fajardo Charity District Hospital, Fajardo, P. R.
Cloninger, Rowell Connor	University Hospital, Baltimore, Md.
Copeland, Herbert Bernard, Jr.	Gallinger Municipal Hospital, Washington, D. C.
Cowley, R. Adams	University Hospital, Baltimore, Md.
Dodd, Patricia	University Hospital, Baltimore, Md.
Doukas, James A.	West Baltimore General Hospital, Baltimore, Md.
Drake, Miles Edward	University Hospital, Baltimore, Md.
Ebeling, William Carl, III	University Hospital, Baltimore, Md.
Elias, Thomas Glenn	University Hospital, Baltimore, Md.
Everett, John Thomas	St. Joseph's Hospital, Baltimore, Md.
Farkas, Robert William	Sinai Hospital, Baltimore, Md.
Feaster, James Henry, Jr.	Charleston General Hospital, Charleston, W. Va.
Feldman, Maurice, Jr.	Michael Reese Hospital, Chicago, Ill.
Foard, Wilbur Harper	University Hospital, Baltimore, Md.
Futterman, Perry	University Hospital, Baltimore, Md.
García Y García, José Antonio	St. Elizabeth Hospital, Chicago, Ill.
Gassaway, Franklyn Drennan	South Baltimore General Hospital, Baltimore, Md.
Godlove, John Carlton	Maryland General Hospital, Baltimore, Md.
Goldstein, Marvin	University Hospital, Baltimore, Md.
Grumbine, Francis Levine	Bon Secours Hospital, Baltimore, Md.
Guthrie, William Wilkinson	Newark City Hospital, Newark, N. J.
Guy, Ernest Gordon	University Hospital, Baltimore, Md.
Hamill, James Edward	Santa Rosa Hospital, San Antonio, Texas
Hayden, Richard Carroll	Bon Secours Hospital, Baltimore, Md.
Herold, Paul Garmer	Maryland General Hospital, Baltimore, Md.
Hobelmann, Charles Frederick	Mercy Hospital, Baltimore, Md.
Hölljes, Henry Wirt	University Hospital, Baltimore, Md.
Horn, Helen Amelia	University Hospital, Baltimore, Md.
Houska, Henry John	St. Joseph's Hospital, Baltimore, Md.
Ingram, Phyllis Ray	Church Home and Hospital, Baltimore, Md.

Ingram, William Braxton	United States Naval Hospital
Jernigan, John Mayo, Jr.	University Hospital, Baltimore, Md.
Jones, Bobby Lee	Franklin Square Hospital, Baltimore, Md.
Kishpaugh, Majorie Bird	Western Pennsylvania Hospital, Pittsburgh, Pa.
Kreis, George Joseph, Jr.	United States Naval Hospital
Lambert, Herman James, Jr.	St. Vincent's Hospital, Portland, Oregon
Lampley, William Askew	James M. Jackson Memorial Hospital, Miami, Fla.
Lerman, Philip H.	Sinai Hospital, Baltimore, Md.
Levine, Stuart Charles	Mount Sinai Hospital, Chicago, Ill.
Lilienfeld, Abraham Morris	West Baltimore General Hospital, Baltimore, Md.
Littlefield, James Beaton	Church Home and Hospital, Baltimore, Md.
Maxwell, George Alexander, Jr.	United States Naval Hospital
Milloff, Bernard	Gallinger Municipal Hospital, Washington, D. C.
Mintzer, Donald Willis	University Hospital, Baltimore, Md.
Morrow, Thomas Lacy, Jr.	United States Naval Hospital
Mosberg, William Henry, Jr.	University Hospital, Baltimore, Md.
Norment, Richard Baxter, III	University Hospital, Baltimore, Md.
O'Donnell, Charles Francis	Mercy Hospital, Baltimore, Md.
Osborne, William Wilson	Mercy Hospital, Baltimore, Md.
Patterson, Carl Norris	Mercy Hospital, Baltimore, Md.
Pierpont, Edwin Lowell	Mercy Hospital, Baltimore, Md.
Pool, Champe Clark	Mercy Hospital, Pittsburgh, Pa.
Pratt, Louis John, Jr.	St. Joseph's Hospital, Baltimore, Md.
Ramundo, Michael Raymond	Paterson General Hospital, Paterson, N. J.
Randolph, Edward Burl	Mercy Hospital, Pittsburgh, Pa.
Rees, David Thomas, Jr.	Altoona Hospital, Altoona, Pa.
Riley, Eugene John	St. Joseph's Hospital, Baltimore, Md.
Robbins, Morris Allen	Cooper Hospital, Camden, N. J.
Rolfes, Harry Franklin	Mercy Hospital, Baltimore, Md.
Rubenstone, Albert Irving	Mount Sinai Hospital, Philadelphia, Pa.
Scavone, Edmond	St. Joseph's Hospital, Baltimore, Md.
Schwartz, Aaron David	Kings County Hospital, Brooklyn, N. Y.
Seabright, Howard Lee	Ohio Valley General Hospital, Wheeling, W. Va.
Shaw, Charles Edward, Jr.	Maryland General Hospital, Baltimore, Md.
Simons, George Murray	University Hospital, Baltimore, Md.
Spelsberg, Walter Karl	Mercy Hospital, Baltimore, Md.
Steinberg, Stanley Herbert	Sinai Hospital, Baltimore, Md.
Stichel, Frederick Louis, Jr.	Bon Secours Hospital, Baltimore, Md.
Taylor, Sarah Alice	Charlotte Memorial Hospital, Charlotte, N. C.
Thompson, Lewis Bradford	Hartford Hospital, Hartford, Conn.
Tinker, Francis Xavier Paul	Mercy Hospital, Baltimore, Md.
Traband, Millard Tolson, Jr.	University Hospital, Baltimore, Md.
Turner, Roy Byron, Jr.	Mercy Hospital, Baltimore, Md.
Ullsperger, John Francis	Mercy Hospital, Baltimore, Md.
Wehling, Benjamin Bird	City Hospital, Akron, Ohio
Wilkins, Kenneth Worth	Garfield Memorial Hospital, Washington, D. C.
Wilson, Mary Stuart	Garfield Memorial Hospital, Washington, D. C.
Wooden, Allen Curtis	West Baltimore General Hospital, Baltimore, Md.
Woodrum, Olin Cain	California Hospital, Los Angeles, Calif.
Wright, Isaac Clark	United States Naval Hospital
Yaffe, Stanley Norman	Central Dispensary and Emergency Hospital, Washington, D. C.

MATRICULATES

SENIOR CLASS, JANUARY 13, 1944 TO SEPTEMBER 29, 1944

Alvarez, José Alberto, *University of Puerto Rico*.........................Puerto Rico
Anchell, Melvin, *B.S., University of Maryland, 1941*........................Maryland
Ardinger, Joseph Stanley, Jr., *B.S., University of Maryland, 1943*..........Maryland
Bacon, Arthur Maynard, Jr., *B.S., Loyola College, 1941*....................Maryland
Bell, Houston Lesher, *B.S., University of Maryland, 1943* Maryland
Bloxom, John Madison, III, *B.S., University of Virginia, 1941*..............Virginia
Brady, Charles Eldon, *A.B., University of North Carolina, 1939*........North Carolina
Brady, Frank Joseph, *B.S., Washington College, 1941*.......................Maryland
Brandes, Herbert Gibbs, *B.S., University of Maryland, 1943*....District of Columbia
Brill, Warren Daniel, *B.S., University of Maryland, 1941*..................Maryland
Brown, Richard James, *B.S., University of Maryland, 1943*................Connecticut
Buckey, Robert Bruce, *A.B., University of New Mexico, 1941*..............Maryland
Callahan, Daniel Harry, Jr., *B.S., Bowdoin College, 1941*..........Massachusetts
Carr, Charles Edwin, Jr., *B.S., Loyola College, 1941*.......................Maryland
Chaput, Charles Dupré, *A.B., Dartmouth College, 1941*..............Massachusetts
Cintrón, Miguel, *West Virginia University*.........................Puerto Rico
Cloninger, Rowell Connor, *A.B., Lenoir Rhyne College, 1942*......North Carolina
Copeland, Herbert Bernard, Jr., *West Virginia University*..........West Virginia
Cowley, R. Adams, *University of Utah*....................................Utah
Dodd, Patricia, *B.S., University of Maryland, 1943*...........................Georgia
Doukas, James A., *B.S., Washington College, 1941*........................Maryland
Drake, Miles Edward, *B.S., M.S., Oregon State College, 1933, 1934; Ph.D., University of Southern California, 1938*..................................Maryland
Ebeling, William Carl, III, *B.S., University of Maryland, 1943*.............Maryland
Elias, Thomas Glenn, *A.B., Western Maryland College, 1941*................Maryland
Everett, John Thomas, *B.S., Mt. St. Mary's College, 1941*..................Maryland
Farkas, Robert William, *A.B., University of Maryland, 1941*............Pennsylvania
Feaster, James Henry, Jr., *A.B., West Virginia University, 1941*.......West Virginia
Feldman, Maurice, Jr., *A.B., The Johns Hopkins University, 1941*...........Maryland
Foard, Wilbur Harper, *Asbury College*.....................................Maryland
Futterman, Perry, *A.B., The Johns Hopkins University, 1941*..............Maryland
García y García, José Antonio, *B.S., University of Puerto Rico, 1941*......Puerto Rico
Gassaway, Franklyn Drennan, *B.S., University of Maryland, 1943*..........Arizona
Godlove, John Carlton, *A.B., Dickinson College, 1933*......................Maryland
Goldstein, Marvin, *A.B., The Johns Hopkins University, 1941*..............Maryland
Grumbine, Francis Levine, *A.B., Western Maryland College, 1941*...........Maryland
Guthrie, William Wilkinson, *A.B., University of Pennsylvania, 1941* ... West Virginia
Guy, Ernest Gordon, *B.S., University of North Carolina, 1941; University of North Carolina School of Medicine, 1941–1943*..................North Carolina
Hamill, James Edward, *B.S., University of Maryland, 1941*..................Maryland
Hayden, Richard Carroll, *B.S., University of Maryland, 1943*..............Maryland
Herold, Paul Garmer, *Duke University*.....................................Maryland
Hobelmann, Charles Frederick, *A.B., The Johns Hopkins University, 1941*..Maryland
Hölljes, Henry Wirt Duvall, *A.B., Western Maryland College, 1941*.......Maryland
Horn, Helen Amelia, *A.B., Goucher College, 1941*.........................Maryland
Houska, Henry John, *A.B., Loyola College, 1941*..........................Maryland
Ingram, Phyllis Ray, *B.S., University of Vermont, 1943*....................Maryland
Ingram, William Braxton, *B.S., University of North Carolina, 1942; University of North Carolina School of Medicine 1941–1943*.................North Carolina
Jernigan, John Mayo, Jr., *University of Maryland*.........................Maryland
Jones, Bobby Lee, *B.S., University of Maryland, 1941*......................Maryland
Kishpaugh, Marjorie Bird, *B.S., Lebanon Valley College, 1941*..........Pennsylvania
Kreis, George Joseph, Jr., *University of Maryland*..........................Maryland
Lambert, Herman James, Jr., *B.S., University of Hawaii, 1941*.............Georgia
Lampley, William Askew, *B.S., Furman University, 1941*..............North Carolina
Lerman, Philip H., *University of Maryland*.................................Maryland
Levine, Stuart Charles, *B.S., University of Maryland, 1941*................Maryland
Lilienfeld, Abraham Morris, *A.B., The Johns Hopkins University, 1941; Albany Medical College, 1941–1942*...Maryland

Littlefield, James Beaton, *A.B., University of Virginia, 1941*.........Massachusetts
Maxwell, George Alexander, Jr., *B.S., University of Maryland, 1943*......Maryland
Milloff, Bernard, *B.S., University of Maryland, 1941*......................Maryland
Mintzer, Donald Willis, *B.S., University of Maryland, 1943*..............New Jersey
Morrow, Thomas Lacy, Jr., *B.S., University of North Carolina, 1942; University of North Carolina School of Medicine, 1941–1943*............District of Columbia
Mosberg, William Henry, Jr., *B.S., University of Maryland, 1943*..........Maryland
Norment, Richard Baxter, III., *B.S., University of Maryland, 1943*..........Maryland
O'Donnell, Charles Francis, *The Johns Hopkins University*...............Maryland
Osborne, William Wilson, *University of Georgia*..........................Georgia
Patterson, Carl Norris, *B.S., Franklin and Marshall College, 1941*..........Maryland
Pierpont, Edwin Lowell, *B.S., University of Maryland, 1943*...............Maryland
Pool, Champe Clark, *A.B., West Virginia University, 1941*.............West Virginia
Pratt, Louis John, *B.S., Loyola College, 1941*..........................Maryland
Ramundo, Michael Raymond, *A.B., Syracuse University, 1941*...........New Jersey
Randolph, Edward Burl, *A.B., West Virginia University, 1944*........West Virginia
Rees, David Thomas, *A.B., West Virginia University, 1938*.............Pennsylvania
Riley, Eugene John, *B.S., University of Maryland, 1943*...................Maryland
Robbins, Morris Allen, *A.B., University of Pennsylvania, 1941*.........New Jersey
Rolfes, Harry Franklin, *B.S., University of Maryland, 1943*...............Maryland
Rubenstone, Albert Irving, *A.B., University of Pennsylvania, 1941*.........Maryland
Scavone, Edmond, *B.S., Loyola College, 1941*..........................Maryland
Schwartz, Aaron David, *A.B., University of Pennsylvania, 1941*..........New York
Seabright, Howard Lee, *A.B., Washington and Jefferson College, 1941*....West Virginia
Shaw, Charles Edward, Jr., *B.S., University of Maryland, 1943*.............Maryland
Simons, George Murray, *B.S., University of Maryland, 1943*...............Maryland
Spelsberg, Walter Karl, *B.S., University of Maryland, 1943*.........West Virginia
Steinberg, Stanley Herbert, *B.S., University of Maryland, 1943*..District of Columbia
Stichel, Frederick Louis, Jr., *B.S., University of Maryland, 1943*..........Maryland
Taylor, Sarah Alice, *B.S., University of North Carolina, 1942; University of North Carolina School of Medicine, 1941–1943*.................North Carolina
Thompson, Lewis Bradford, *Dartmouth College*.....................Massachusetts
Tinker, Francis Paul, *B.S., Loyola College, 1941*........................Maryland
Traband, Millard Tolson, Jr., *University of Maryland*..................Maryland
Turner, Roy Byron, Jr., *B.S., University of Maryland, 1943*.......District of Columbia
Ullsperger, John Francis, *A.B., Loyola College, 1941*.....................Maryland
Wehling, Benjamin Bird, *B.S., Wheaton College, 1941*........................Ohio
Wilkins, Kenneth Worth, *B.S., University of North Carolina, 1942; University of North Carolina School of Medicine, 1941–1943*.................North Carolina
Wilson, Mary Stuart, *A.B., Randolph-Macon Woman's College, 1941*........Maryland
Wooden, Allen Curtis, *B.S., Wake Forest College, 1941*...................Maryland
Woodrum, Olin Cain, *The Johns Hopkins University*.....................Maryland
Wright, Isaac Clark, *B.S., University of North Carolina, 1942; University of North Carolina School of Medicine, 1941–1943*...................North Carolina
Yaffe, Stanley Norman, *B.S., University of Maryland, 1941*..............Maryland

JUNIOR CLASS, JANUARY 13, 1944 TO SEPTEMBER 29, 1944

Amsterdam, Benjamin, *B.S., University of Maryland, 1942*..............New Jersey
Anderson, George Hagan, *B.S., University of Florida, 1942*..................Florida
Arnold, Gayle Gardner, *A.B., The Johns Hopkins University, 1942*.........Maryland
Ayd, Frank Joseph Jr., *A.B., Loyola College, 1942*........................Maryland
Baggett, Joseph Woodrow, *A.B., University of North Carolina, 1942; University of North Carolina School of Medicine, June 1942–December 1943*....North Carolina
Bailey, Claude Fletcher, *A.B., University of North Carolina, 1942; University of North Carolina School of Medicine, June 1942–December 1943*....North Carolina
Barker, David Hargis, *B.S., University of Maryland, 1943*.................Maryland
Barnes, Thomas Gordon, II, *A.B., Emory University, 1942*...................Georgia
Baroody, Philip Charles, *A.B., St. Anselm's College, 1942*............New Hampshire
Bell, David Fowler, Jr., *B.S., University of Maryland, 1942*...............Maryland
Berdiansky, Benjamin, *A.B., The Johns Hopkins University, 1942*...........Maryland
Brannen, Joseph Harrison, *A.B., Emory University, 1942*...................Georgia

Brendle, William Kendig, *B.S., University of Maryland, 1942*..............Maryland
Butler, Charles Leavitt, *B.S., University of Alabama, 1942; University of Alabama School of Medicine, June 1942–November 1943*..................Alabama
Byrne, Robert Francis, *B.S., University of Maryland, 1943*................Maryland
Callender, George Russell, Jr., *University of Maryland*......District of Columbia
Camponeschi, Oscar Wilde, *B.S., University of Maryland, 1942*.............Maryland
Canter, Nathan, *B.S., Loyola College, 1942*...........................Maryland
Clark, Mary Dorcas, *A.B., West Virginia University, 1943*..............Pennsylvania
Conner, Eugene Hayward, *University of Maryland*.......................Maryland
Cook, Sallie, *A.B., University of Pennsylvania, 1942*.......................Maryland
Davis, John Bernard, *University of Maryland*..........................Maryland
Davis, Ralph Fletcher, *B.S., University of Maryland, 1942*...............Maryland
de Alba, Eduardo, Jr., *A.B., The Johns Hopkins University, 1942*..Republic of Panama
Dennis, John Murray, *University of Maryland*.........................Maryland
Doenges, John Pell, *A.B., Western Maryland College, 1942*................Maryland
Fitzpatrick, Vincent dePaul, Jr., *A.B., Loyola College, 1942*...............Maryland
Foster, William Leicester, *B.S., University of North Carolina, 1943; University of North Carolina School of Medicine, June 1942–December 1943*.....North Carolina
Frank, William Henry, *University of Pittsburgh*......................Pennsylvania
Ganey, Joseph Brannen, *A. B., Emory University, 1942*...................Florida
Givens, Austin Edward, *A.B., Pomona College, 1942* Maryland
Greenleaf, Helen Emily, *B.S., Bucknell University, 1941*................New Jersey
Hall, Arthur Thomas, Jr., *B.S., Loyola College, 1942*.....................Maryland
Hamburger, Daniel Oscar, *A.B., The Johns Hopkins University, 1942* Maryland
Haynes, Howard Harry, Jr., *University of Utah*...............................Utah
Hedrick, John Albert, *Marshall College*.........................West Virginia
Hennessy, John Francis, *A.B., The Johns Hopkins University, 1942*......New Jersey
Herrick, Stanley Edward, Jr., *B.S., Bowdoin College, 1942*........Massachusetts
Herrmann, Albert Casper, *University of Maryland*......................Maryland
Holbrook, William Addison, Jr., *B.S., University of Maryland, 1942*........Maryland
Hoyos-Napoleoni, Hector Anthony, *West Virginia University*..........Puerto Rico
Hutchins, Harry, *Emory University*...................................Georgia
Keister, Stephen Ridinger, *Duke University*......................Pennsylvania
Kelly, Alexander Palmer, Jr., *University of Maryland*..............North Carolina
Kenworthy, Richard Albert III, *Yale University*......................Maryland
Kurland, Leonard Terry, *A.B., The Johns Hopkins University, 1942*........Maryland
Lemen, Daniel Bair, *University of Maryland* ....Maryland
Linthicum, Charles Milton, *University of Maryland*.....................Maryland
Maguire, Henry Francis, *B.S., Washington College, 1942*..............New Jersey
McNinch, James Robinson, Jr., *A.B., Washington & Jefferson College, 1942* Pennsylvania
Miller, Clarence Stockton, *University of Nevada*........................Maryland
Myers, Paul Robert, *A.B., Western Maryland College, 1942*................Maryland
Norton, Alfred Simpson, *University of Maryland*..............District of Columbia
O'Neill, Allen Jay, *University of Maryland*............................Virginia
Ott, Roy Hamilton, Jr., *A.B., Williams College, 1942*...................New York
Owen Arthur John, *A.B., Loyola College, 1942*..........................Maryland
Parham, Sumner Malone, *A.B., University of North Carolina, 1942; University of North Carolina School of Medicine, June 1942–December 1943*......North Carolina
Peck, Robert DeWitt, *A.B., West Virginia University, 1942*...........West Virginia
Phillips, Malcolm Dudley, *Houghton College* ....Maryland
Pike, Warren Horton, Jr., *B.S., Virginia Military Institute, 1942*..........Indiana
Reahl, Joseph Edward, *B.S., Loyola College, 1942*.......................Maryland
Robinson, William Henry, *The Johns Hopkins University*.................Maryland
Rodgers, William Ansley, *A.B., University of North Carolina, 1942; University of North Carolina School of Medicine, June 1942–December 1943*..........Florida
Rosenblatt, Leah, *A.B., Hood College, 1942*............................Maryland
Rosenthal, John Lauchheimer, *A.B., The Johns Hopkins University, 1942*..Maryland
Rudo, Alvin David, *The Johns Hopkins University*.......................Maryland
Rudo, Marvin, *B.S., University of Maryland, 1942*.......................Maryland
Sanchez, Hilarion, Jr., *West Virginia University*...................Puerto Rico
Shell, James Henry, Jr., *B.S., Furman University, 1942; University of North Carolina School of Medicine, June 1942–December 1943*...........South Carolina

Sokolski, Edward John, *A.B., Norwich University, 1942*..............Connecticut
Stedem, Anthony Frederick Augustine, Jr., *A.B., Loyola College, 1942*.....Maryland
Steinbach, Stanley Roy, *A.B., The Johns Hopkins University, 1942*..........Maryland
Stewart, Charles Wilbur, Jr., *The Johns Hopkins University*..............Maryland
Strahan, Charles, Jr., *B.S., Dickinson College, 1942*......................Maryland
Street, Russell Barber, Jr., *University of Wisconsin*..............Massachusetts
Summerlin, Winston Lee, *University of Florida*..............................Florida
Tansey, John Jerome, *Brown University*..............................Massachusetts
Toms, Paul Bernhardt, *A.B., Catawba College, 1942; University of North Carolina School of Medicine, June 1942–December 1943*..................North Carolina
Touchet Mary Louise, *University of Maryland*..........................Maryland
Trevaskis, Allan Edward, *B.S., Harvard University, 1942*.................Maryland
Wagner, Victor, *University of Pennsylvania*............................New Jersey
Weinberg, Harold Herbert, *B.S., Loyola College, 1942*....................Maryland
Weintraub, Joseph, *B.S., University of Maryland, 1942*...................Maryland
Wheeler, Thomas Easson, *The Johns Hopkins University*..................Maryland
White, Joseph McCurley, III, *B.S., Loyola College, 1942*..................Maryland
Winslow, Oliver Parry, Jr., *A.B., The Johns Hopkins University, 1943* Maryland
Woodward, Arthur Fletchall, *B.S., University of Maryland, 1942*..........Maryland
Zinberg, Norman Earl, *B.S., University of Maryland, 1942*................Maryland

SOPHOMORE CLASS, JANUARY 13, 1944 TO SEPTEMBER 29, 1944

Amlicke, Jeanne Dorothy, *B.S., University of Maryland, 1943*...........New Jersey
Arnold, Jesse Hoyt, Jr., *A.B., University of North Dakota, 1942*..............Maryland
Audet, Charles Henry, Jr., *University of Maryland*......................Connecticut
Audet, Robert Joseph, *University of Maryland*..........................Connecticut
Bannen, William James, Jr., *B.S., Bethany College, 1943*................Pennsylvania
Bauer, Robert Edward, *A.B., The Johns Hopkins University, 1943*.........Maryland
Benavent, Walter José, *B.S., University of Maryland, 1943*..............Puerto Rico
Bonifant, Alfred Dement, *B.S., University of Maryland, 1943*..............Maryland
Brickner, John George, III, *B.S., University of Maryland, 1944*............Maryland
Brosemer, Lowell Russell, *B.S., University of California, 1942*............California
Brown, Eli Matthew, *B.S., University of Maryland, 1944*..................Maryland
Brown, Robert Ray, *West Virginia University*.........................West Virginia
Buckner, Louise Paddon, *B.S., University of Maryland, 1943*...............Maryland
Cano, Harold Vernon, *B.S., University of Maryland, 1944*..............New Jersey
Carr, William Francis, *Mt. St. Mary's College*.........................Pennsylvania
Christopher, Thomas West, *Brown University*.......................Massachusetts
Clyman, Sidney Gary, *B.S., University of Maryland, 1944*................Maryland
Codd, Francis Ignatius, *University of Maryland, 1944*....................Maryland
Cohn, Jerome Elias, *A.B., The Johns Hopkins University, 1943*............Maryland
Connor, Thomas Byrne, *A.B., Loyola College, 1943*.........................Maryland
Corasaniti, Rita Anne, *University of Maryland*..........................Maryland
Cross, Richard Joseph, Jr., *B.S., Mt. St. Mary's College, 1943*.............Maryland
D'Antonio, Joseph, *Maryville College*...................................Maryland
Diaz-Carazo, José, *B.S., Mt. St. Mary's College, 1942*.................Puerto Rico
Driggs, Guy Kenneth, *University of Arizona*................................Arizona
Eareckson, Vincent Offley, Jr., *B.S., University of Maryland, 1944*........Maryland
Eaton, Jay Warren, *University of Maryland*..............................Maryland
Eavey, James Lee, *B.S., Franklin and Marshall College, 1943*...............Maryland
Fischer, Joseph Samuel, *A.B., The Johns Hopkins University, 1943*..........Maryland
Fisher, George William, *B.S., Franklin and Marshall College, 1943*.........Maryland
[1]Friedman, Asher Arthur, *A.B., The Johns Hopkins University, 1943*........ Virginia
Frye, Paul Eugene, *University of Maryland*...............................Maryland
Gaby, Samuel David, *A.B., The Johns Hopkins University, 1943*............ Maryland
Gamble, John Reeves, Jr., *A.B., Emory University, 1943*............North Carolina
Gentry, William Daniel, Jr., *University of Maryland*......................Maryland
Gerlach, James Johnson, *A.B., Colorado College, 1943*......................Maryland
Goetz, Abraham Aaron, *A.B., The Johns Hopkins University, 1944*..........New York

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[1] Did not complete the second semester—illness.

Gray, Harry William, *B.S., University of Maryland, 1944*	Maryland
Greenfield, Duane Leonard, *A.B., Sioux Falls College, 1939; M.A., Columbia University, 1940*	Maryland
Hansen, Leland Jay, *Utah State Agricultural College*	Utah
Hardin, Henry Carter, Jr., *A.B., Emory University, 1943*	Florida
Harley, John Barker, *B.S., Dickinson College, 1943*	Maryland
Hawkins, Charles William, *University of Chattanooga*	Tennessee
Hefner, Charles Arthur, *West Virginia University*	West Virginia
Hendrickson, Edwin Okey, III, *The Johns Hopkins University*	Maryland
Hill, Harry Edward, *B.S., University of Maryland, 1942*	Maryland
Hunter, J. Poulson, *B.S., University of Utah, 1943*	Utah
Hyman, Nathan Bernard, *The Johns Hopkins University*	Maryland
Jennings, Erwin Reeves, *A.B., Emory University, 1943*	Georgia
Kiel, August, *University of Maryland*	Maryland
Knapp, Harry Grove Robert, *Colorado College*	North Dakota
Knox, Lawrence Joseph, *B.S., University of Maryland, 1944*	Maryland
Latimer, John Howard, *University of Utah*	Utah
Levickas, Herbert Joseph, *B.S., University of Maryland, 1944*	Maryland
Macht, Allan Harris, *B.S., University of Maryland, 1944*	Maryland
Maholick, Leonard Thomas, *B.S., University of Maryland, 1944*	District of Columbia
Markley, Raymond Law, Jr., *A.B., Gettysburg College, 1943*	Pennsylvania
Marshall, Charles Benton, Jr., *Ohio University*	West Virginia
Massenburg, George Yellott, *Duke University*	Georgia
May, Robert Eugene, *A.B., Loyola College, 1942*	Maryland
McElfatrick, George Charles, *Dartmouth College*	Delaware
McPherson, Thomas Coteswortii, *Emory University*	Georgia
McWilliams, Clarence Emanuel, Jr., *A.B., Western Maryland College, 1943*	Maryland
Mintzer, Joseph Herman, *B.S., University of Maryland, 1943*	New York
Mitchell, John Armitage, *Gettysburg College*	Maryland
Morrison, John Edward, *The Johns Hopkins University*	Maryland
Nataro, Jerome Paul, *B.S., Seton Hall College, 1942*	New Jersey
Nelson, Robert Edwin, *Brown University*	Massachusetts
Nichols, Pomeroy, Jr., *Emory University*	North Carolina
North, Ellsworth Howard, Jr., *B.S., University of Maryland, 1944*	Maryland
O'Hare, James Stewart, *B.S., Loyola College, 1943*	Maryland
Orrison, William Werner, *A.B., Western Maryland College, 1943*	Maryland
Osborne, Horace Henry, *University of Georgia*	Georgia
Park, William Favre, *University of Maryland*	Maryland
Paul, Earl Rupert, *University of Virginia*	Maryland
Peck, Clemmer Marcus, *B.S., Hampden-Sydney College, 1942*	West Virginia
Platt, Lois Irene, *A.B., Goucher College, 1931*	Maryland
Rawlins, John Calvin, *B.S., Western Maryland College, 1943*	Delaware
Reisch, Milton, *B.S., University of Maryland, 1944*	Maryland
Reiter, Ralph Alan, *Bridgewater College*	Maryland
Riley, Robert Annan, Jr., *Emory University*	Ohio
Roberts, James Alwin, *B.S., University of Maryland, 1944*	Maryland
Rossberg, Robert Crittenden, *B.S., University of Maryland, 1944*	Maryland
Sacks, Sidney, *B.S., University of Maryland, 1944*	Maryland
Sewell, James Anderson, *Emory University*	Florida
Shallenberger, Frank Anthony, Jr., *Loyola College*	Maryland
Sills, David Nicholson, Jr., *University of Maryland*	Delaware
Smith, Edward Milton, Jr., *B.S., University of Maryland, 1944*	Maryland
Smith, Edward Patrick, Jr., *University of Maryland*	Maryland
Stallard, Clinton Wolfe, Jr., *West Virginia Institute of Technology*	West Virginia
Swindell, Herbert Van Arden, *B.S., University of Maryland, 1944*	Maryland
Toby, Leon, *A.B., The Johns Hopkins University, 1943*	Maryland
Vaughn, James Anderson, Jr., *A.B., Emory University, 1943*	Florida
Weitzman, Elliott Lionel, *The Johns Hopkins University*	Maryland
Wentz, Irl Jesse, *A.B., Western Maryland College, 1942*	Pennsylvania
Wolfe, Walter McIlhaney, Jr., *Virginia Military Institute*	Maryland
Workman, Joseph Berkeley, *A.B., Western Maryland College, 1943*	Maryland
Young, Alexander William, Jr., *B.S., University of Maryland, 1944*	West Virginia
Young, Richard Atlee, *A.B., Gettysburg College, 1943*	Maryland

FRESHMAN CLASS, JANUARY 13, 1944 TO SEPTEMBER 29, 1944

Abell, Harry Davis, *The Johns Hopkins University*	Kentucky
Allen, Gladys Martha, *B.S., University of Maryland, 1943*	Maryland
Anthony, James Elmer, Jr., *B.S., Washington College, 1944*	Maryland
Beatty, John Orville, *University of Nevada*	Nevada
Benson, John Fisher, *University of Maryland*	Maryland
Bentz, Alice Ruth, *B.S., University of Maryland, 1943*	Maryland
Berggreen, Raymond George, *A.B., Carlton College, 1943*	Minnesota
Bindeman, William Wylie, *B.S., Wheaton College, 1944*	North Carolina
Blevins, Joseph Wendell, *B.S., Geneva College, 1943*	Pennsylvania
Carouge, Gilbert Morris, *University of Maryland*	Maryland
Chase, Henry Vincent, *Ph.B., Loyola College, 1943*	Maryland
Coffey, Michael Joseph, *University of Notre Dame*	New Jersey
Cohen, Bernard Stanley, *University of Maryland*	Maryland
Cohen, Irvin, *A.B., The Johns Hopkins University, 1944*	Maryland
Cooper, Harry Douglas, *B.S., Washington College, 1941*	Maryland
Cooper, William Benjamin, Jr., *University of Maryland*	Maryland
Corzine, William Jenkins, Jr., *The Citadel*	North Carolina
Coultas, Elizabeth Louise, *A.B., Goucher College, 1944*	New Jersey
Cushner, Irvin Morris, *University of Maryland*	Maryland
[1]Davies, Ruth Camille, *West Virginia University*	West Virginia
Dentry, Elizabeth Anne Gordon, *A.B., Notre Dame College, 1943*	Maryland
Dorman, Parker Sturgis, *A.B., Amherst College, 1943*	District of Columbia
Duvall, Robert Caywood, Jr., *University of Maryland*	Maryland
Eppes, Williford, *University of Maryland*	Maryland
Evans, John Ebenezer, Jr., *B.S., Davidson College, 1943*	North Carolina
Faraino, Frank Anthony, *B.S., Loyola College, 1943*	Maryland
Fisher, Donald Ernst, *University of Maryland*	Maryland
Forrer, Gordon Randolph, *University of Maryland*	Maryland
Gakenheimer, William Alfred, *The Johns Hopkins University*	Maryland
Gardner, Robert Kline, *University of Maryland*	Maryland
Geddes, David Kofoid, *University of California*	California
Gerlach, Jane Knowles, *A.B., Colorado College, 1943*	Maryland
Gillson, Edward Michael, *A.B., St. Peter's College, 1943*	New Jersey
Grau, Edward Gordon, *B.S., Loyola College, 1943*	Maryland
Griffin, James Edward, *A.B., Western Maryland College, 1943*	Maryland
Grossman, Louis Ward, *Westminster College*	Pennsylvania
Haase, Frederick Robert, *University of Maryland*	Maryland
Hahn, Robert Roland, *University of Maryland*	Maryland
Hall, Howard Essex, *Western Maryland College*	Maryland
Hearne, Calvin Beck, *College of Wooster*	Ohio
Hogan, John Francis, Jr., *Loyola College*	Maryland
Houghton, James Francis, *Dartmouth College*	New Jersey
Hunter, Robert Carl, *University of Maryland*	Maryland
Imbrie, David Ellwood, *A.B., Washington and Jefferson College*	Pennsylvania
Jernigan, Lane McDermott, *University of Maryland*	Maryland
Judd, Allyn Francis, *A.B., Tufts College, 1944*	Massachusetts
Leung, Bernard, *University of Maryland*	New York
Levin, Norman, *University of Maryland*	Maryland
LiPira, Joseph Francis, *University of Maryland*	Maryland
Machata, Francis Karl, *Ph.B., Loyola College, 1943*	New York
Mannino, Peter Paul, *Western Maryland College*	Maryland
Mansberger, Arlie Roland, Jr., *Western Maryland College*	West Virginia
Mattern, Carl Frederick Theodore, *The Johns Hopkins University*	Maryland
[2]McCauley, Betty Jane, *B.S., University of Maryland, 1943*	Maryland
Mitchell, Wallace Herttell, *B.S., University of Florida, 1943*	Florida
Morrow, John Gordon, Jr., *Emory University*	Georgia
Nachlas, Nathan Edward, *University of Maryland*	Maryland
Pertz, Elden Hobart, *West Virginia Wesleyan College*	West Virginia
Phillips, David Lee, *A.B., The Johns Hopkins University, 1943*	Maryland

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[1] Did not complete the year.

[2] Did not complete year—illness.

Piggott, John Burr, Jr., *B.S., Virginia Military Institute, 1943*	District of Columbia
Post, William Reyman, *University of Mississippi*	Mississippi
Powell, Jack Hanson, Jr., *A.B., Emory University, 1943*	Georgia
Rasch, George Chesley, Jr., *University of Maryland*	Maryland
Rogers, Joseph Megeath, *University of Maryland*	Virginia
Rosser, John Hays, *B.S., Wheaton College, 1943*	Maryland
[1]Rucker, Nancy Williams, *A.B., Hollins College, 1940; University of Maryland*	Virginia
Sachs, Sidney Herman, *University of Maryland*	Maryland
Schapiro, Joseph Solomon, *The Johns Hopkins University*	Maryland
Schnitzker, William Frederic, *Transylvania College*	Maryland
Scott, Harry Baty, *University of Virginia*	Virginia
[1]Scott, James Zeccheus, *Kemper Jr. Military School*	Ohio
Senning, Frederick Stephen, *University of Maryland*	Maryland
Shaw, John Hill, *B.S., Hampden-Sydney College, 1943*	Virginia
Shear, Joseph, *University of Maryland*	Maryland
Shulman, Melvin, *The Johns Hopkins University*	Maryland
Silber, Earle, *The Johns Hopkins University*	Maryland
Smith, John Richard, Jr., *B.S., Washington College, 1943*	Maryland
Spino, Pascal Daniel, *Bethany College*	Pennsylvania
Stenstrom, William Harold, *B.S., College of Puget Sound, 1943*	Washington
Sussman, Harold, *A.B., The Johns Hopkins University, 1943*	Maryland
Swink, Robert Landrum, *Emory University*	Florida
Trench, James McKechan, *Bethany College*	Pennsylvania
Tyler, John Edward, Jr., *College of the Holy Cross*	Massachusetts
Valderas, José Gervasio, *University of Puerto Rico*	Puerto Rico
Vanden Bosche, August Harry, *University of Maryland*	Maryland
Venable, Sidney Johnson, Jr., *B.S., Hampden-Sydney College, 1943*	Maryland
Waltz, Robert Claude, *B.S., Washington & Jefferson College, 1943*	Ohio
Waterman, Roger Sherman, *Bethany College*	Pennsylvania
[1]Wells, Benjamin Sargent, Jr., *Loyola College*	Maryland
White, John Phillips, III, *The Johns Hopkins University*	Maryland
Whitehead, Samuel Lester, *University of Maryland*	Maryland
Williams, James Delbert, *Texas Technological College*	California
Williams, Johnny Elbert, *Texas Technological College*	California
Wilson, Benjamin James, *A.B., West Virginia University, 1943*	West Virginia
Winokur, George, *The Johns Hopkins University*	Maryland
Young, John Paul, *The Johns Hopkins University*	Maryland

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[1] Did not complete the year.

SUMMARY OF STUDENTS

January 13, 1944 to September 29, 1944

	Male	*Female*	*Total*
Senior Class	90	6	96
Junior Class	83	5	88
Sophomore Class	95	4	99
[1]Freshman Class	88	8	96
	356	23	379
[1] Withdrawals, 5	2	3	5
	354	20	374

GEOGRAPHICAL DISTRIBUTION OF STUDENTS

January 13, 1944 to September 29, 1944

Alabama	1	Delaware	3
Arizona	2	District of Columbia	9
California	4	Florida	10
Connecticut	4	Georgia	12

Indiana	1
Kentucky	2
Maryland	217
Massachusetts	9
Minnesota	1
Mississippi	1
Nevada	1
New Hampshire	1
New Jersey	14
New York	5
North Carolina	19
North Dakota	1
Ohio	5
Pennsylvania	17
South Carolina	1
Tennessee	1
Utah	5
Virginia	7
Washington	1
West Virginia	20

FOREIGN

Republic of Panama	1
Puerto Rico	8

LIST OF COLLEGE SOURCES OF STUDENTS ENROLLED

Session—January 13, 1944 to September 29, 1944

Alabama, University of	2
Amherst College	1
Arizona, University of	1
Asbury College	1
Bethany College	4
Bowdoin College	2
Bridgewater College	1
Brown University	3
Bucknell University	1
California, University of	3
Carlton College	1
Catawba College	1
Chattanooga, University of	1
Citadel, The	1
Colorado College	3
Columbia University	2
Dartmouth College	4
Davison College	1
Dickinson College	3
Duke University	4
Emory University	16
Florida, University of	3
Franklin & Marshall College	3
Furman University	2
Geneva College	1
Georgia, University of	2
Gettysburg College	4
Goucher College	2
Hampden-Sydney College	3
Harvard University	1
Hawaii, University of	1
Hollins College	1
Holy Cross, College of The	1
Hood College	1
Houghton College	1
Johns Hopkins University, The	45
Kemper Jr. Military School	1
Lebanon Valley College	1
Lenoir Rhyne College	1
Loyola College	31
Marshall College	1
Maryland, University of	116
Maryville College	1
Mississippi, University of	1
Mt. St. Mary's College	4
Nevada, University of	2
New Mexico, University of	2
North Carolina, University of	13
North Dakota, University of	1
Norwich University	1
Notre Dame, University of	1
Oberlin College	1
Oregon State College	1
Pennsylvania, University of	6
Pittsburgh, University of	1
Pomona College	1
Puerto Rico, University of	2
Puget Sound, College of	1
Randolph-Macon College	1
St. Anselm's College	1
St. Peter's College	1
Seton Hall College	1
Sioux Falls College	1
Southern California, University of	1
Syracuse University	1
Texas Technological College	2
Transylvania College	1
Trinity College	2
Tufts College	1
Utah, University of	4
Utah State Agricultural College	1
Vermont, University of	1
Virginia Military Institute	3
Virginia, University of	4
Wake Forest College	1
Washington College	6
Washington & Jefferson College	4
Western Maryland College	16
Westminster College	1
West Virginia Institute of Technology	1
West Virginia University	15
West Virginia Wesleyan College	1
Wheaton College	1
William & Mary, College of	1
Williams College	1
Wisconsin, University of	1
Wooster, College of	1
Yale University	1

UNIVERSITY OF MARYLAND SCHOOL OF MEDICINE AND COLLEGE OF PHYSICIANS AND SURGEONS

GRADUATES, JUNE 22, 1945

Amsterdam, Benjamin, B.S. New Jersey
Anderson, George Hagan, B.S... Georgia
Arnold, Gayle Gardner, A.B. ... Maryland
Ayd, Frank Joseph, Jr., A.B..... Maryland
Baggett, Joseph Woodrow, A.B. North Carolina
Bailey, Claude Fletcher, A.B. North Carolina
Barker, David Hargis, B.S...... Maryland
Barnes, Thomas Gordon, II, A.B. Georgia
Baroody, Philip Charles, A.B. New Hampshire
Bell, David Fowler, Jr., B.S..... Maryland
Berdiansky, Benjamin A.B...... Maryland
Brannen, Joseph Harrison, A.B.. Georgia
Brendle, William Kendig, B.S.... Maryland
Butler, Charles Leavitt, B.S... Alabama
Byrne, Robert Francis, B.S...... Maryland
Callender, George Russell, Jr. District of Columbia
Camponeschi, Oscar Wilde, B.S.. Maryland
Canter, Nathan, B.S............ Maryland
Clark, Mary Dorcas, A.B... Pennsylvania
Conner, Eugene Hayward...... Maryland
Cook, Sallie, A.B.............. Maryland
Davis, John Bernard........... Maryland
Davis, Ralph Fletcher, B.S...... Maryland
de Alba, Eduardo, Jr., A.B. Republic of Panama
Dennis, John Murray.......... Maryland
Doenges, John Pell, A.B........ Maryland
Fitzpatrick, Vincent dePaul, Jr., A.B. Maryland
Foster, William Leicester, B.S. North Carolina
Frank, William Henry...... Pennsylvania
Ganey, Joseph Brannen, A.B... Florida
Givens, Austin Edward, A.B.... Maryland
Greenleaf, Helen Emily, B.S... New Jersey
Hall, Arthur Thomas, Jr., B.S... Maryland
Hamburger, Daniel Oscar, A.B.. Maryland
Haynes, Howard Harry, Jr....... Utah
Hedrick, John Albert.... West Virginia
Hennessy, John Francis, A.B. New Jersey
Herrick, Stanley Edward, Jr., B.S. Massachusetts
Herrmann, Albert Casper....... Maryland
Holbrook, William Addison, Jr., B.S. Maryland
Hoyos-Napoleoni, Hector Anthony Puerto Rico
Hutchins, Harry................ Georgia
Keister, Stephen Ridinger.. Pennsylvania
Kelly, Alexander Palmer, Jr. North Carolina
Kenworthy, Richard Albert, III. Maryland
Kurland, Leonard Terry, A.B.... Maryland
Lemen, Daniel Bair............ Maryland
Linthicum, Charles Milton...... Maryland
Maguire, Henry Francis, B.S. New Jersey
McNinch, James Robinson, Jr., A.B. Pennsylvnia
Miller, Clarence Stockton....... Maryland
Myers, Paul Robert, A.B....... Maryland
Norton, Alfred Simpson District of Columbia
O'Neill, Allen Jay............ Virginia
Ott, Roy Hamilton, Jr., A.B... New York
Parham, Sumner Malone, A.B. North Carolina
Peck, Robert DeWitt, A.B. West Virginia
Phillips, Malcolm Dudley....... Maryland
Pike, Warren Horton, Jr., B.S... Indiana
Reahl, Joseph Edward, B.S..... Maryland
Robinson, William Henry....... Maryland
Rodgers, William Ansley, A.B... Florida
Rosenblatt, Leah, A.B.......... Maryland
Rosenthal, John Lauchheimer, A.B. Maryland
Rudo, Alvin David.......... Maryland
Rudo, Marvin, B.S............. Maryland
Sanchez, Hilarion, Jr....... Puerto Rico
Shell, James Henry, Jr., B.S. South Carolina
Sokolski, Edward John, A.B. Connecticut
Stedem, Anthony Frederick Augustine, Jr., A.B.................... Maryland
Steinbach, Stanley Roy, A.B.... Maryland
Stewart, Charles Wilbur, Jr..... Maryland
Strahan, Charles, Jr., B.S....... Maryland
Street, Russell Barber, Jr.. Massachusetts
Summerlin, Winston Lee........ Florida
Tansey, John Jerome ... Massachusetts
Toms, Paul Bernhardt, A.B. North Carolina
Touchet, Mary Louise......... Maryland
Trevaskis, Allan Edward, B.S.... Maryland
Wagner, Victor .... New Jersey
Weinberg, Harold Herbert, B.S.. Maryland
Weintraub, Joseph, B.S......... Maryland
Wheeler, Thomas Easson...... Maryland
White, Joseph McCurley, III, B.S. Maryland
Winslow, Oliver Parry, Jr., A.B.. Maryland
Woodward, Arthur Fletchall, B.S. Maryland

HONORS

UNIVERSITY PRIZE GOLD MEDAL

WILLIAM ADDISON HOLBROOK, JR.
LEONARD TERRY KURLAND

CERTIFICATES OF HONOR

WILLIAM LEICESTER FOSTER
DANIEL OSCAR HAMBURGER
JOHN LAUCHHEIMER ROSENTHAL
ANTHONY FREDERICK AUGUSTINE STEDEM, JR.
JOSEPH EDWARD REAHL

ANNOUNCEMENT OF INTERNSHIPS—GRADUATES OF JUNE 22, 1945

July 1, 1945–March 31, 1946

Amsterdam, Benjamin	Metropolitan Hospital, New York, N. Y.
Anderson, George Hagan	University Hospital, Baltimore, Md.
Arnold, Gayle Gardner	Union Memorial Hospital, Baltimore, Md.
Ayd, Frank Joseph, Jr.	St. Joseph's Hospital, Baltimore, Md.
Baggett, Joseph Woodrow	University Hospital, Baltimore, Md.
Bailey, Claude Fletcher	Mercy Hospital, Baltimore, Md.
Barker, David Hargis	Gallinger Municipal Hospital, Washington, D. C.
Barnes, Thomas Gordon, II	University Hospital, Baltimore, Md.
Baroody, Philip Charles	St. Vincent's Hospital, Bridgeport, Conn.
Bell, David Fowler, Jr.	Mercy Hospital, Baltimore, Md.
Berdiansky, Benjamin	West Baltimore General Hospital, Baltimore, Md.
Brannen, Joseph Harrison	Hillman Hospital, Birmingham, Alabama
Brendle, William Kendig	Mercy Hospital, Baltimore, Md.
Butler, Charles Leavitt	University Hospital, Baltimore, Md.
Byrne, Robert Francis	Garfield Memorial Hospital, Washington, D. C.
Callender, George Russell, Jr.	University Hospital, Baltimore, Md.
Camponeschi, Oscar Wilde	Church Home and Hospital, Baltimore, Md.
Canter, Nathan	Newark City Hospital, Newark, N. J.
Clark, Mary Dorcas	University Hospital, Baltimore, Md.
Conner, Eugene Hayward	University Hospital, Baltimore, Md.
Cook, Sallie	University Hospital, Baltimore, Md.
Davis, John Bernard	Charleston General Hospital, Charleston, W. Va.
Davis, Ralph Fletcher	St. Mary's Hospital, Waterbury, Conn.
de Alba, Eduardo, Jr.	Santo Tomás Hospital, Panama, R. P.
Dennis, John Murray	University Hospital, Baltimore, Md.
Doenges, John Pell	University Hospital, Baltimore, Md.
Fitzpatrick, Vincent dePaul, Jr.	Mercy Hospital, Baltimore, Md.
Foster, William Leicester	New York Polyclinic Medical School and Hospital, New York, N. Y.
Frank, William Henry	St. Joseph's Hospital, Baltimore, Md.
Ganey, Joseph Brannen	University Hospital, Baltimore, Md.
Givens, Austin Edward	Allegheny General Hospital, Pittsburgh, Pa.
Greenleaf, Helen Emily	Hospital for Women of Maryland, Baltimore, Md.

Hall, Arthur Thomas, Jr.	St. Agnes' Hospital, Baltimore, Md.
Hamburger, Daniel Oscar	Sinai Hospital, Baltimore, Md.
Haynes, Howard Harry, Jr.	St. Luke's Hospital, San Francisco, Calif.
Hedrick, John Albert	Mercy Hospital, Baltimore, Md.
Hennessy, John Francis	St. Francis Hospital, Jersey City, N. J.
Herrick, Stanley Edward, Jr.	St. Luke's Hospital, Chicago, Ill.
Herrmann, Albert Casper	West Baltimore General Hospital, Baltimore, Md.
Holbrook, William Addison, Jr.	University Hospital, Baltimore, Md.
Hoyos-Napoleoni, Hector Anthony	West Baltimore General Hospital, Baltimore, Md.
Hutchins, Harry	Crawford W. Long Memorial Hospital, Atlanta, Ga.
Keister, Stephen Ridinger	Mercy Hospital, Pittsburgh, Pa.
Kelly, Alexander Palmer, Jr.	Mercy Hospital, Baltimore, Md.
Kenworthy, Richard Albert, III	Youngstown Hospital, Youngstown, Ohio
Kurland, Leonard Terry	University Hospital, Baltimore, Md.
Lemen, Daniel Bair	Colorado General Hospital, Denver, Colorado
Linthicum, Charles Milton	Mercy Hospital, Baltimore, Md.
Maguire, Henry Francis	Newark City Hospital, Newark, N. J.
McNinch, James Robinson, Jr.	University Hospital, Baltimore, Md.
Miller, Clarence Stockton	General Hospital of Fresno County, Fresno, Calif.
Myers, Paul Robert	Mercy Hospital, Baltimore, Md.
Norton, Alfred Simpson	California Hospital, Santa Monica Branch, Los Angeles, Calif.
O'Neill, Allen Jay	Central Dispensary and Emergency Hospital, Washington, D. C.
Ott. Roy Hamilton, Jr.	University Hospital, Baltimore, Md.
Parham, Sumner Malone	University Hospital, Baltimore, Md.
Peck, Robert DeWitt	Church Home and Hospital, Baltimore, Md.
Phillips, Malcolm Dudley	Maryland General Hospital, Baltimore, Md.
Pike, Warren Horton, Jr.	Presbyterian Hospital, Chicago, Ill.
Reahl, Joseph Edward	Mercy Hospital, Baltimore, Md.
Robinson, William Henry	University Hospital, Baltimore, Md.
Rodgers, William Ansley	St. Joseph's Hospital, Baltimore, Md.
Rosenblatt, Leah	Hospital for Women of Maryland, Baltimore, Md.
Rosenthal, John Lauchheimer	Sinai Hospital, Baltimore, Md.
Rudo, Alvin David	Sinai Hospital, Baltimore, Md.
Rudo, Marvin	Sinai Hospital, Baltimore, Md.
Sanchez, Hilarion, Jr.	Mercy Hospital, Baltimore, Md.
Shell, James Henry	New York Polyclinic Medical School and Hospital, New York, N. Y.
Sokolski, Edward John	Stamford Hospital, Stamford, Conn.
Stedem, Anthony Frederick Augustine, Jr.	Mercy Hospital, Baltimore, Md.
Steinbach, Stanley Roy	Sinai Hospital, Baltimore, Md.
Stewart, Charles Wilbur, Jr.	Maryland General Hospital, Baltimore, Md.
Strahan, Charles, Jr.	Mercy Hospital, Baltimore, Md.
Street, Russell Barber, Jr.	Ancker Hospital, St. Paul, Minn.
Summerlin, Winston Lee	New York Hospital, New York, N. Y.
Tansey, John Jerome	United States Naval Hospital
Toms, Paul Bernhardt	Union Memorial Hospital, Baltimore, Md.
Trevaskis, Allan Edward	Allentown Hospital, Allentown, Pa.
Wagner, Victor	Kings County Hospital, Brooklyn, N. Y.

Weinberg, Harold Herbert	South Baltimore General Hospital, Baltimore, Md.
Weintraub, Joseph	Mercer Hospital, Trenton, N. J.
Wheeler, Thomas Easson	South Baltimore General Hospital, Baltimore, Md.
White, Joseph McCurley, III	South Baltimore General Hospital, Baltimore, Md.
White, Mary Louise Touchet	South Baltimore General Hospital, Baltimore, Md.
Winslow, Oliver Parry, Jr.	Collis P. and Howard Huntington Memorial Hospital, Pasadena, Calif.
Woodward, Arthur Fletchall	Garfield Memorial Hospital, Washington, D. C.

MATRICULATES

SENIOR CLASS, OCTOBER 19, 1944 to JUNE 22, 1945

Amsterdam, Benjamin, *B.S., University of Maryland, 1942*............New Jersey
Anderson, George Hagan, *B.S., University of Florida, 1942*..............Florida
Arnold, Gayle Gardner, *A.B., The Johns Hopkins University, 1942*.........Maryland
Ayd, Frank Joseph, Jr., *A.B., Loyola College, 1942*........................Maryland
Baggett, Joseph Woodrow, *A.B., University of North Carolina, 1942; University of North Carolina School of Medicine, June 1942–December 1943*....North Carolina
Bailey, Claude Fletcher, *A.B., University of North Carolina, 1942; University of North Carolina School of Medicine, June 1942–December 1943*....North Carolina
Barker, David Hargis, *B.S., University of Maryland, 1943*..................Maryland
Barnes, Thomas Gordon, II, *A.B., Emory University, 1942*..................Georgia
Baroody, Philip Charles, *A.B., St. Anselm's College, 1942*..........New Hampshire
Bell, David Fowler, Jr., *B.S., University of Maryland, 1942*...............Maryland
Berdiansky, Benjamin, *A.B., The Johns Hopkins University, 1942*...........Maryland
Brannen, Joseph Harrison, *A.B., Emory University, 1942*...................Georgia
Brendle, William Kendig, *B.S., University of Maryland, 1942*..............Maryland
Butler, Charles Leavitt, *B.S., University of Alabama, 1942; University of Alabama School of Medicine, June 1942–November 1943*..................Alabama
Byrne, Robert Francis *B.S., University of Maryland, 1943*.................Maryland
Callender, George Russell, Jr., *University of Maryland*......District of Columbia
Camponeschi, Oscar Wilde, *B.S., University of Maryland, 1942*.............Maryland
Canter, Nathan, *B.S., Loyola College, 1942*...............................Maryland
Clark, Mary Dorcas, *A.B., West Virginia University, 1943*...........Pennsylvania
Conner, Eugene Hayward, *University of Maryland*.........................Maryland
Cook, Sallie, *A.B., University of Pennsylvania, 1942*.....................Maryland
Davis, John Bernard, *University of Maryland*.............................Maryland
Davis, Ralph Fletcher, *B.S., University of Maryland 1942*................Maryland
de Alba, Eduardo, Jr., *A.B., The Johns Hopkins University, 1942*..Republic of Panama
Dennis, John Murray, *University of Maryland*............................Maryland
Doenges, John Pell, *A.B., Western Maryland College, 1942*................Maryland
Fitzpatrick, Vincent dePaul, Jr., *A.B., Loyola College, 1942*..............Maryland
Foster, William Leicester, *B.S., University of North Carolina, 1943; University of North Carolina School of Medicine, June 1942–December 1943*....North Carolina
Frank, William Henry, *University of Pittsburgh*......................Pennsylvania
Ganey, Joseph Brannen, *A.B., Emory University, 1942*..................Florida
Givens, Austin Edward, *A.B., Pomona College, 1942*.......................Maryland
Greenleaf, Helen Emily, *B.S., Bucknell University, 1941*..............New Jersey
Hall, Arthur Thomas, Jr., *B.S., Loyola College, 1942*.....................Maryland
Hamburger, Daniel Oscar, *A.B., The Johns Hopkins University, 1942*.......Maryland
Haynes, Howard Harry, Jr., *University of Utah*..........................Utah
Hedrick, John Albert, *Marshall College*...........................West Virginia
Hennessy, John Francis, *A.B., The Johns Hopkins University, 1942*....New Jersey
Herrick, Stanley Edward, Jr., *B.S., Bowdoin College, 1942*............Massachusetts
Herrmann, Albert Casper, *University of Maryland*........................Maryland
Holbrook, William Addison, Jr., *B.S., University of Maryland, 1942*.......Maryland
Hoyos-Napoleoni, Hector Anthony, *West Virginia University*........Puerto Rico
Hutchins, Harry, *Emory University*...................................Georgia
Keister, Stephen Ridinger, *Duke University*.......................Pennsylvania
Kelly, Alexander Palmer, Jr., *University of Maryland*.............North Carolina
Kenworthy, Richard Albert, III, *Yale University*.......................Maryland
Kurland, Leonard Terry, *A.B., The Johns Hopkins University, 1942*........Maryland
Lemen, Daniel Bair, *University of Maryland*.............................Maryland
Linthicum, Charles Milton, *University of Maryland*......................Maryland
Maguire, Henry Francis, *B.S., Washington College, 1942*..............New Jersey
McNinch, James Robinson, Jr., *A.B., Washington & Jefferson College, 1942* Pennsylvania
Miller, Clarence Stockton, *University of Nevada*........................Maryland
Myers, Paul Robert, *A.B., Western Maryland College, 1942*................Maryland

Norton, Alfred Simpson, *University of Maryland*................District of Columbia
O'Neill, Allen Jay, *University of Maryland*............................Virginia
Ott, Roy Hamilton, Jr., *A.B.*, *Williams College, 1942*.................New York
[1]Owen, Arthur John, *A.B.*, *Loyola College, 1942*........................Maryland
Parham, Sumner Malone, *A.B.*, *University of North Carolina, 1942; University of North Carolina School of Medicine, June 1942–December 1943*......North Carolina
Peck, Robert DeWitt, A.B., *West Virginia University, 1942*..........West Virginia
Phillips, Malcolm Dudley, *Houghton College*...........................Maryland
Pike, Warren Horton, Jr., *B.S.*, *Virginia Military Institute, 1942*..........Indiana
Reahl, Joseph Edward, *B.S.*, *Loyola College, 1942*........................Maryland
Robinson, William Henry, *The Johns Hopkins University*.................Maryland
Rodgers, William Ansley, *A.B.*, *University of North Carolina, 1942; University of North Carolina School of Medicine, June 1942–December 1943*..........Florida
Rosenblatt, Leah, *A.B.*, *Hood College, 1942*.............................Maryland
Rosenthal, John Lauchheimer, *A.B.*, *The Johns Hopkins University, 1942*..Maryland
Rudo, Alvin David, *The Johns Hopkins University*........................Maryland
Rudo, Marvin, *B.S.*, *University of Maryland, 1942*........................Maryland
Sanchez, Hilarion, Jr., *West Virginia University*...................Puerto Rico
Shell, James Henry, Jr., *B.S.*, *Furman University, 1942; University of North Carolina School of Medicine, June 1942–December 1943*...............South Carolina
Sokolski, Edward John, *A.B.*, *Norwich University, 1942*..............Connecticut
Stedem, Anthony Frederick Augustine, Jr., *A.B.*, *Loyola College, 1942*.....Maryland
Steinbach, Stanley Roy, *A.B.*, *The Johns Hopkins University, 1942*.........Maryland
Stewart, Charles Wilbur, Jr., *The Johns Hopkins University*..............Maryland
Strahan, Charles, Jr., *B.S.*, *Dickinson College, 1942*......................Maryland
Street, Russell Barber, Jr., *University of Wisconsin*..............Massachusetts
Summerlin, Winston Lee, *University of Florida*...........................Florida
Tansey, John Jerome, *Brown University*.........................Massachusetts
Toms, Paul Bernhardt, *A.B.*, *Catawba College, 1942; University of North Carolina School of Medicine, June 1942–December 1943*...................North Carolina
Touchet, Mary Louise, *University of Maryland*..........................Maryland
Trevaskis, Allan Edward, *B.S.*, *Harvard University, 1942*.................Maryland
Wagner, Victor, *University of Pennsylvania*..........................New Jersey
Weinberg, Harold Herbert, *B.S.*, *Loyola College, 1942*...................Maryland
Weintraub, Joseph, *B.S.*, *University of Maryland, 1942*...................Maryland
Wheeler, Thomas Easson, *The Johns Hopkins University*.................Maryland
White, Joseph McCurley, III, *B.S.*, *Loyola College, 1942*..................Maryland
Winslow, Oliver Parry, Jr., *A.B.*, *The Johns Hopkins University, 1943*.....Maryland
Woodward, Arthur Fletchall, *B.S.*, *University of Maryland, 1942*.........Maryland
Zinberg, Norman Earl, *B.S.*, *University of Maryland, 1942*................Maryland

JUNIOR CLASS, OCTOBER 19, 1944 to JUNE 22, 1945

Amlicke, Jeanne Dorothy, *B.S.*, *University of Maryland, 1943*...........New Jersey
Arnold, Jesse Hoyt, Jr., *A.B.*, *University of North Dakota, 1942*............Maryland
Audet, Charles Henry, Jr., *University of Maryland*....................Connecticut
Audet, Robert Joseph, *University of Maryland*........................Connecticut
Bannen, William James, Jr., *B.S.*, *Bethany College, 1943*................Pennsylvania
Bauer, Robert Edward, *A.B.*, *The Johns Hopkins University, 1943*..........Maryland
Benavent, Walter José, *B.S.*, *University of Maryland, 1943*.............Puerto Rico
Bonifant, Alfred Dement, *B.S.*, *University of Maryland, 1943*...............Maryland
Brickner, John George, III, *B.S.*, *University of Maryland, 1944*............Maryland
Brosemer, Lowell Russell, *B.S.*, *University of California, 1942*..........California
Brown, Eli Matthew, *B.S.*, *University of Maryland, 1944*..................Maryland
Brown, Robert Ray, *West Virginia University*......................West Virginia
Buckner, Louise Paddon, *B.S.*, *University of Maryland, 1943*..............Maryland
Cano, Harold Vernon, *B.S.*, *University of Maryland, 1944*..............New Jersey
Carr, William Francis, *Mt. St. Mary's College*.......................Pennsylvania
Christopher, Thomas West, *Brown University*......................Massachusetts
Clyman, Sidney Gary, *B.S.*, *University of Maryland, 1944*.................Maryland
Codd, Francis Ignatius, *University of Maryland, 1944*.......................Maryland

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[1] Did not complete the year—illness.

Cohn, Jerome Elias, *A.B., The Johns Hopkins University, 1943*	Maryland
Connor, Thomas Byrne, *A.B., Loyola College, 1943*	Maryland
Corasaniti, Rita Anne, *University of Maryland*	Maryland
Cross, Richard Joseph, Jr., *B.S., Mt. St. Mary's College, 1943*	Maryland
Crouch, Walter Lee, *University of North Carolina; University of North Carolina School of Medicine, March 1943–September 1944*	North Carolina
D'Antonio, Joseph, *Maryville College*	Maryland
Diaz-Carazo, José, *B.S., Mt. St. Mary's College, 1942*	Puerto Rico
Driggs, Guy Kenneth, *University of Arizona*	Arizona
Eareckson, Vincent Offley, Jr., *B.S., University of Maryland, 1944*	Maryland
Earnhardt, Herman Lee, Jr., *A.B., Duke University, 1943; University of North Carolina School of Medicine, March 1943–September 1944*	North Carolina
§Eaton, Jay Warren, *University of Maryland*	Maryland
Eavey, James Lee, *B.S., Franklin and Marshall College, 1943*	Maryland
Fischer, Joseph Samuel, *A.B., The Johns Hopkins University, 1943*	Maryland
Fisher, George William, *B.S., Franklin and Marshall College, 1943*	Maryland
Frye, Paul Eugene, *University of Maryland*	Maryland
Gaby, Samuel David, *A.B., The Johns Hopkins University, 1943*	Maryland
Gamble, John Reeves, Jr., *A.B., Emory University, 1943*	North Carolina
Gentry, William Daniel, Jr., *University of Maryland*	Maryland
Gerlach, James Johnson, *A.B., Colorado College, 1943*	Maryland
Goetz, Abraham Aaron, *A.B., The Johns Hopkins University, 1944*	New York
Gray, Harry William, *B.S., University of Maryland, 1944*	Maryland
Greenfield, Duane Leonard, *A.B., Sioux Falls College, 1939; M.A., Columbia University, 1940*	Maryland
Hansen, Leland Jay, *Utah State Agricultural College*	Utah
Hardin, Henry Carter, Jr., *A.B., Emory University, 1943*	Florida
Harley, John Barker, *B.S., Dickinson College, 1943*	Maryland
Hawkins, Charles William, *University of Chattanooga*	Tennessee
Hefner, Charles Arthur, *West Virginia University*	West Virginia
Hendrickson, Edwin Okey, III, *The Johns Hopkins University*	Maryland
Hill, Harry Edward, *B.S., University of Maryland, 1942*	Maryland
Hunter, J. Poulson, *B.S., University of Utah, 1943*	Utah
Hyman, Nathan Bernard, *The Johns Hopkins University*	Maryland
Jennings, Erwin Reeves, *A.B., Emory University, 1943*	Georgia
Kiel, August, *University of Maryland*	Maryland
Knapp, Harry Grove Robert, *Colorado College*	North Dakota
Knox, Lawrence Joseph, *B.S., University of Maryland, 1944*	Maryland
Latimer, John Howard, *University of Utah*	Utah
Levickas, Herbert Joseph, *B.S., University of Maryland, 1944*	Maryland
Macht, Allan Harris, *B.S., University of Maryland, 1944*	Maryland
Maholick, Leonard Thomas, *B.S., University of Maryland, 1944*	District of Columbia
Markley, Raymond Law, Jr., *A.B., Gettysburg College, 1943*	Pennsylvania
Marshall, Charles Benton, Jr., *Ohio University*	West Virginia
Massenburg, George Yellott, *Duke University*	Georgia
Matthews, Otto Stevens, *University of North Carolina; University of North Carolina School of Medicine, March 1943–September 1944*	North Carolina
May, Robert Eugene, *A.B., Loyola College, 1942*	Maryland
McElfatrick, George Charles, *Dartmouth College*	Delaware
McPherson, Thomas Cotesworth, *Emory University*	Georgia
McWilliams, Clarence Emanuel, Jr., *A.B., Western Maryland College, 1943*	Maryland
Mintzer, Joseph Herman, *B.S., University of Maryland, 1943*	New York
Mitchell, John Armitage, *Gettysburg College*	Maryland
Morrison, John Edward, *The Johns Hopkins University*	Maryland
Nataro, Jerome Paul, *B.S., Seton Hall College, 1942*	New Jersey
Nelson, Robert Edwin, *Brown University*	Massachusetts
Nichols, Pomeroy, Jr., *Emory University*	North Carolina
North, Ellsworth Howard, Jr., *B.S., University of Maryland, 1944*	Maryland
O'Hare, James Stewart, *B.S., Loyola College, 1943*	Maryland
Orrison, William Werner, *A.B., Western Maryland College, 1943*	Maryland
Osborne, Horace Henry, *University of Georgia*	Georgia
Park, William Favre, *University of Maryland*	Maryland
Paul, Earl Rupert, *University of Virginia*	Maryland

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§ Died July 12, 1945.

Peck, Clemmer Marcus, *B.S., Hampden-Sydney College, 1942*..........West Virginia
Platt, Lois Irene, *A.B., Goucher College, 1931*..........Maryland
Rawlins, John Calvin, *B.S., Western Maryland College, 1943*..........Delaware
Reisch, Milton, *B.S., University of Maryland, 1944*..........Maryland
Reiter, Ralph Alan, *Bridgewater College*..........Maryland
Riley, Robert Annan, Jr., *Emory University*..........Ohio
Roberts, James Alwin, *B.S., University of Maryland, 1944*..........Maryland
Rossberg, Robert Crittenden, *B.S., University of Maryland, 1944*..........Maryland
Sacks, Sidney, *B.S., University of Maryland, 1944*..........Maryland
Sewell, James Anderson, *Emory University*..........Florida
Shallenberger, Frank Anthony, Jr., *B.S., Loyola College, 1944*..........Maryland
Sills, David Nicholson, Jr., *University of Maryland*..........Delaware
Smith, Edward Milton, Jr., *B.S., University of Maryland, 1944*..........Maryland
Smith, Edward Patrick, Jr., *University of Maryland*..........Maryland
Stallard, Clinton Wolfe, Jr., *West Virginia Institute of Technology*.....West Virginia
Swindell, Herbert Van Arden, *B.S., University of Maryland, 1944*..........Maryland
Toby, Leon, *A.B., The Johns Hopkins University, 1943*..........Maryland
Vaughn, James Anderson, Jr., *A.B., Emory University, 1943*..........Florida
Weitzman, Elliott Lionel, *The Johns Hopkins University*..........Maryland
Wentz, Irl Jesse, *A.B., Western Maryland College, 1942*..........Pennsylvania
Wolfe, Walter McIlhaney, Jr., *Virginia Military Institute*..........Maryland
Workman, Joseph Berkeley, *A.B., Western Maryland College, 1943*..........Maryland
Young, Alexander William, Jr *B.S., University of Maryland, 1944*.....West Virginia
Young, Richard Atlee, *A.B., Gettysburg College, 1943*..........Maryland

SOPHOMORE CLASS, OCTOBER 19, 1944 TO JUNE 22, 1945

Abell, Harry Davis, *The Johns Hopkins University*..........Kentucky
Allen, Gladys Martha, *B.S., University of Maryland, 1943*..........Maryland
Anthony, James Elmer, Jr., *B.S., Washington College, 1944*..........Maryland
Beatty, John Orville, *University of Nevada*..........Nevada
Benson, John Fisher, *University of Maryland*..........Maryland
Berggreen, Raymond George, *A.B., Carlton College, 1943*..........Minnesota
Bindeman, William Wylie, *B.S., Wheaton College, 1944*..........North Carolina
Blevins, Joseph Wendell, *B.S., Geneva College, 1943*..........Pennsylvania
Carouge, Gilbert Morris, *University of Maryland*..........Maryland
Chase, Henry Vincent, *Ph.B., Loyola College, 1943*..........Maryland
Coffey, Michael Joseph, *University of Notre Dame*..........New Jersey
Cohen, Bernard Stanley, *University of Maryland*..........Maryland
Cohen, Irvin, *A.B., The Johns Hopkins University, 1944*..........Maryland
Cooper, Harry Douglas, *B.S., Washington College, 1941*..........Maryland
Cooper, William Benjamin, Jr., *B.S., University of Maryland, 1945*..........Maryland
Corzine, William Jenkins, Jr., *The Citadel*..........North Carolina
Coultas, Elizabeth Louise, *A.B., Goucher College, 1944*..........New Jersey
Cushner, Irvin Morris, *University of Maryland*..........Maryland
Dentry, Elizabeth Anne Gordon, *A.B., Notre Dame College, 1943*..........Maryland
Dorman, Parker Sturgis, *A.B., Amherst College, 1943*........District of Columbia
Duvall, Robert Caywood, Jr., *University of Maryland*..........Maryland
Eppes, Williford, *B.S., University of Maryland, 1945*..........Maryland
Evans, John Ebenezer, Jr., *B.S., Davidson College, 1943*..........North Carolina
Faraino, Frank Anthony, *B.S., Loyola College, 1943*..........Maryland
Fisher, Donald Ernst, *University of Maryland*..........Maryland
Forrer, Gordon Randolph, *B.S., University of Maryland, 1945*..........Maryland
[3]Friedman, Asher Authur, *A.B., The Johns Hopkins University, 1943*..........Virginia
Gakenheimer, William Alfred, *The Johns Hopkins University*..........Maryland
Gardner, Robert Kline, *University of Maryland*..........Maryland
Geddes, David Kofoid, *University of California*..........California
Gerlach, Jane Knowles, *A.B., Colorado College, 1943*..........Maryland

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[3] Entered second semester February 19, 1945.

Gillson, Edward Michael, *A.B., St. Peter's College, 1943*................New Jersey
Grau, Edward Gordon, *B.S., Loyola College, 1943*........................Maryland
Grossman, Louis Ward, *Westminster College*..........................Pennsylvania
Haase, Frederick Robert, *University of Maryland*........................Maryland
Hahn, Robert Roland, *University of Maryland*..........................Maryland
Hall, Howard Essex, *Western Maryland College*.........................Maryland
Hearne, Calvin Beck, *College of Wooster*..................................Ohio
Hogan, John Francis, Jr., *Loyola College*.............................Maryland
Houghton, James Francis, *Dartmouth College*.........................New Jersey
Hunter, Robert Carl, *B.S., University of Maryland, 1945*...............Maryland
Imbrie, David Ellwood, *A.B., Washington and Jefferson College*.........Pennsylvania
Jernigan, Lane McDermott, *University of Maryland*....................Maryland
Judd, Allyn Francis, *A.B., Tufts College, 1944*.....................Massachusetts
Leung, Bernard, *B.S., University of Maryland, 1945*....................New York
Levin, Norman, *University of Maryland*...............................Maryland
LiPira, Joseph Francis, *B.S., University of Maryland, 1945*...............Maryland
Machata, Francis Karl, *Ph.B., Loyola College, 1943*.....................New York
Mannino, Peter Paul, *Western Maryland College*.........................Maryland
Mansberger, Arlie Roland, Jr., *Western Maryland College*............West Virginia
Mattern, Carl Frederick Theodore, *The Johns Hopkins University*........Maryland
Mitchell, Wallace Herttell, *B.S., University of Florida, 1943*............Florida
Morrow, John Gordon, Jr., *Emory University*............................Georgia
Nachlas, Nathan Edward, *University of Maryland*.......................Maryland
Pertz, Elden Hobart, *West Virginia Wesleyan College*................West Virginia
Phillips, David Lee, *A.B., The Johns Hopkins University, 1943*.............Maryland
Piggott, John Burr, Jr., *B.S., Virginia Military Institute, 1943*....District of Columbia
Post, William Reyman, *University of Mississippi*....................Mississippi
Powell, Jack Hanson, Jr., *A.B., Emory University, 1943*...................Georgia
Rasch, George Chesley, Jr., *B.S., University of Maryland, 1945*...........Maryland
Rogers, Joseph Megeath, *University of Maryland*........................Virginia
Rosser, John Hays, *B.S., Wheaton College, 1943*.........................Maryland
Sachs, Sidney Herman, *University of Maryland*..........................Maryland
Schapiro, Joseph Solomon, *The Johns Hopkins University*.................Maryland
Schnitzker, William Frederic, *Transylvania College*......................Maryland
Scott, Harry Baty, *University of Virginia*..............................Virginia
Senning, Frederick Stephen, *University of Maryland*.....................Maryland
Shaw, John Hill, *B.S., Hampden-Sydney College, 1943*.....................Virginia
Shear, Joseph, *University of Maryland*................................Maryland
Shulman, Melvin, *The Johns Hopkins University*.........................Maryland
Silber, Earle, *The Johns Hopkins University*............................Maryland
Smith, John Richard, Jr., *B.S., Washington College, 1943*.................Maryland
Spino, Pascal Daniel, *Bethany College*.............................Pennsylvania
Stenstrom, William Harold, *B.S., College of Puget Sound, 1943*............Washington
Sussman, Harold, *A.B., The Johns Hopkins University, 1943*................Maryland
Swink, Robert Landrum, *Emory University*...............................Florida
Trench, James McKechan, *B.S., Bethany College, 1945*..................Pennsylvania
Tyler, John Edward, Jr., *College of the Holy Cross*..................Massachusetts
Valderas, José Gervasio, *University of Puerto Rico*...................Puerto Rico
Vanden Bosche, August Harry, *University of Maryland*...................Maryland
Venable, Sidney Johnson, Jr., *B.S., Hampden-Sydney College, 1943*.........Maryland
Waltz, Robert Claude, *B.S., Washington & Jefferson College, 1943*..............Ohio
[1]Waterman, Roger Sherman, *Bethany College*........................Pennsylvania
White, John Phillips, III, *The Johns Hopkins University*..................Maryland
Whitehead, Samuel Lester, *University of Maryland*......................Maryland
Williams, James Delbert, *Texas Technological College*..................California
Williams, Johnny Elbert, *Texas Technological College*..................California
Wilson, Benjamin James, *A.B., West Virginia University, 1943*.........West Virginia
Winokur, George, *The Johns Hopkins University*..........................Maryland
Young, John Paul, *The Johns Hopkins University*..........................Maryland

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[1] Did not complete the year.

FRESHMAN CLASS, OCTOBER 19, 1944 TO JUNE 22, 1945

Alecce, Angelo Andrew, *B.S., Loyola College, 1945* ..... Maryland
Allison, George Malcolm, *Marquette University* ..... Illinois
Aponte, Joseph Louis, *University of Puerto Rico* ..... Puerto Rico
[1]Ard, Robert Wilson, *University of Pennsylvania* ..... Maryland
Auld, David, *Swarthmore College* ..... Maryland
Baker, Frank William, Jr., *University of Chicago* ..... Maryland
Beckett, Robert Lea, *University of Maryland* ..... Maryland
Beyer, David Henry, *Cornell University* ..... Minnesota
Bisanar, James Milton, *Davidson College* ..... North Carolina
Bond, Donald Buckey, *A.B., Western Maryland College, 1938* ..... Maryland
Bronstein, Eugene Leonard, *Emory University* ..... New York
Brown, John Ronald, *University of New Hampshire* ..... Utah
Buchness, David Joseph, *Loyola College* ..... Maryland
Buchness, John Michael, *A.B., Loyola College, 1944* ..... Maryland
Bullock, John Boyd, *University of Richmond* ..... Virginia
Bulluck, Matt Heyer, *Guilford College* ..... North Carolina
Carl, Mary Kathryn, *University of Maryland* ..... Maryland
Caimovitz, Robert, *Bethany College* ..... Pennsylvania
[2]Chapman, Norman Stanley, *A.B., Shepherd State Teachers College, 1944* ..... Maryland
[2]Chelton, Louis Guy, *Gettysburg College* ..... Maryland
Condron, James Frank, *Muhlenberg College* ..... Pennsylvania
Crecraft, Harold James, *A.B., Taylor University, 1944* ..... Pennsylvania
Dalton, James Breckenridge, Jr., *University of Richmond* ..... Virginia
Dempsey, Raymond Joseph, *B.S., University of Notre Dame, 1944* ..... Illinois
Dodds, Robert Arthur, *Franklin and Marshall College* ..... Pennsylvania
Dunn, Charles Gilbert, *Ph.B., Loyola College, 1944* ..... Maryland
Dwyer, Frank Philip, Jr., *Mt. St. Mary's College* ..... Pennsylvania
Edwards, Paul Wilburn, III, *Franklin and Marshall College* ..... Maryland
Ensor, Robert Ellwood, *Western Maryland College* ..... Maryland
[2]Fedor, Edward John, *Bethany College* ..... Pennsylvania
Fravel, Charles Richard, *Cornell University* ..... Virginia
Golombek, Leonard Harry, *University of Maryland* ..... Maryland
Grant, Bowie Linn, *Potomac State School of West Virginia* ..... Maryland
Graybill, Alice Katherine, *University of Chicago* ..... West Virginia
Green, James William, *Western Maryland College* ..... Maryland
[2]Hale, George Clyde, Jr., *Harvard University* ..... New Jersey
Hamrick, George Vincent, *Washington University* ..... Maryland
Hankins, John Roland, *University of Virginia* ..... Virginia
Harris, Paul Black, *Franklin and Marshall College* ..... Pennsylvania
Heldrich, Frederick Joseph, Jr., *Yale University* ..... Maryland
Hobart, Richard Loren, Jr., *Washington and Lee University* ..... District of Columbia
Holloway, William Jackson, *Western Maryland College* ..... Maryland
Insley, Marion Clarence, Jr., *University of Maryland* ..... Maryland
Kalafat, John George, *Bethany College* ..... West Virginia
Kastner, Lee Norman, *University of Pennsylvania* ..... Maryland
Kaufman, Raymond Henry, *University of North Carolina* ..... New York
Kemp, Katherine Virdin, *A.B., College of Notre Dame, 1943* ..... Maryland
Kennedy, Carl Hubert, Jr., *University of Virginia* ..... Pennsylvania
Koch, Lillian Dorothy, *B.S., University of Maryland, 1944* ..... Maryland
Kunst, Florence Elizabeth, *A.B., West Virginia University, 1944* ..... West Virginia
Leary, John Sylvester, Jr., *The Citadel* ..... South Carolina
Leograndis, Stephen C., *Duke University* ..... Massachusetts
Lithgow, Charles Henry, *Loyola College* ..... Maryland
Mack, Harry Patterson, *Washington University* ..... New York
Mallis, Nicholas, *Cornell University* ..... Maryland
Matthews, Burton Vincent, *A.B., The Johns Hopkins University, 1943; Cornell University* ..... Maryland

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[1] Did not complete the year—illness.

[2] Did not complete the year.

McCauley, Betty Jane, *B.S., University of Maryland, 1943*................Maryland
McCrumb, Fred Rodgers, Jr., *Loyola College*..................Maryland
Mohler, Donald Ignatius, Jr., *Loyola College*..................Maryland
Newell, Edward Alphonso, *Western Maryland College*..................Maryland
[1]Newell, Josephine Evelyn, *University of South Carolina*........North Carolina
Niswander, Guy Donald, *University of Michigan*..................West Virginia
O'Dea, Daniel Patrick, *Bucknell University*..................Pennsylvania
Padussis, Stephen Konstant, *University of Maryland*..................Maryland
[2]Parelhoff, Merrill Elliott, *University of Maryland*..................Maryland
Petersen, Phyllis Ann, *A.B., University of Michigan, 1943*..............Maryland
Platt, Julian Jay, *Loyola College*..................Maryland
Powell, Albert Milton, Jr., *University of North Carolina*..................Maryland
Raskin, Herbert Alfred, *A.B., University of Michigan, 1940; M.S.P.H., 1941; American University*..................Michigan
[2]Reichhardt, Marjorie Edna, *Limestone College*..................Maryland
Rhyne, Jimmie Lee, *University of North Carolina*..................North Carolina
Rodriguez, Edsel Antonio, *College of the Holy Cross*..................Puerto Rico
Rudolph, Robert Lee, *Ohio University*..................Ohio
Scherr, Merle Sundrell, *West Virginia University*..................West Virginia
Schwartz, Benson Charles, *University of Maryland*..................Maryland
Shell, John Robert, *University of Richmond*..................Virginia
Silverman, Benjamin K., *The Johns Hopkins University*..................Maryland
Silverstein, Daniel Lewis, *Loyola College*..................Maryland
Sirkis, Alvin Louis, *Western Maryland College*..................Maryland
Siwinski, Thaddeus Charles, *A.B., Loyola College, 1944*..................Maryland
Smelser, Rennert Marquette, *University of Maryland*..................Maryland
Snyder, William Allen, *The Johns Hopkins University*..................Maryland
Stahl, Robert Ray, *University of New Hampshire*..................Pennsylvania
Starkey, Nell, *University of Maryland*..................Georgia
Startzman, Henry Hollingsworth, Jr., *Loyola College*..................Maryland
Summers, Linden Dulaney, Jr., *Western Maryland College*..................Maryland
Swisher, Kyle Young, Jr., *Bethany College*..................West Virginia
Tarr, Norman, *Washington College*..................Maryland
Theuerkauf, Frank Joseph, Jr., *Villa Maria College*..................Pennsylvania
Thomas, Clyde Dana, Jr., *Bethany College*..................West Virginia
Thuss, William Getz, Jr., *Emory University*..................Alabama
Walters, Hezekiah G., Jr., *University of North Carolina*..................North Carolina
Ware, Charles Ingersoll, *Wake Forest College*..................New Jersey
Whitehorn, Clark Allan, *The Johns Hopkins University*..................Michigan
Wilson, John Dean, *Bethany College*..................Pennsylvania
Womack, William Spengler, *Emory and Henry College*..................Virginia

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[1] Did not complete the year—illness.

[2] Did not complete the year.

SUMMARY OF STUDENTS

(October 19, 1944 to June 22, 1945)

	Male	Female	Total
Senior Class	[1]83	5	88
Junior Class	97	4	101
Sophomore Class	[1]86	4	90
Freshman Class	[1]86	[1]10	96
	352	23	375
[1]Withdrawals	8	2	10
Seniors—1 Sophomores—1 Freshmen—8	344	21	365

GEOGRAPHICAL DISTRIBUTION OF STUDENTS

(October 19, 1944 to June 22, 1945)

Alabama	2
Arizona	1
California	4
Connecticut	3
Delaware	3
District of Columbia	6
Florida	10
Georgia	10
Illinois	2
Indiana	1
Kentucky	2
Maryland	209
Massachusetts	6
Michigan	11
Minnesota	2
Mississippi	1
Nevada	1
New Hampshire	1
New Jersey	13
New York	7
North Carolina	19
North Dakota	1
Ohio	5
Pennsylvania	26
South Carolina	2
Tennessee	1
Utah	5
Virginia	13
Washington	1
West Virginia	20

FOREIGN

Republic of Panama	1
Puerto Rico	7

LIST OF COLLEGE SOURCES OF STUDENTS ENROLLED

October 19, 1944 to June 22, 1945

Alabama, University of	2
American University	1
Amherst College	1
Arizona, University of	1
Bethany College	10
Bowdoin College	1
Bridgewater College	1
Brown University	3
Bucknell University	2
California, University of	3
Carleton College	1
Catawba College	1
Chattanooga, University of	1
Chicago, University of	11
Citadel, The	2
Colorado College	3
Columbia University	2
Cornell University	4
Dartmouth College	2
Davidson College	2
Dickinson College	2
Duke University	5
Emory University	18
Emory and Henry College	1
Florida, University of	3
Franklin & Marshall College	5
Furman University	1
Geneva College	1
Georgia, University of	1
Gettysburg College	6
Goucher College	1
Guilford College	1
Hampden-Sydney College	3
Harvard University	2
Hollins College	1
Holy Cross, College of The	2
Hood College	1
Houghton College	1
Johns Hopkins University, The	44
Kemper Jr. Military School	1
Limestone College	1
Loyola College	34
Marquette University	1
Marshall College	1
Maryland, University of	94
Maryville College	1
Michigan, University of	3
Mississippi, University of	1
Mt. St. Mary's College	4
Muhlenberg College	1
Nevada, University of	2
New Hampshire, University of	2
New Mexico, University of	1
North Carolina, University of	12
North Dakota, University of	1
Norwich University	1
Notre Dame, University of	3
Oberlin College	1
Ohio University	1
Pennsylvania, University of	4
Pittsburgh, University of	1
Pomona College	1
Potomac State School, W. Va.	1
Puerto Rico, University of	1
Puget Sound, College of	1
Richmond, University of	3
St. Anselm's College	1
St. Peter's College	1
Seton Hall College	1
Shepherd State Teachers College	1
Sioux Falls College	1
South Carolina, University of	1

Swarthmore College	1
Taylor University	1
Texas Technological College	2
Transylvania College	1
Trinity College	2
Tufts College	1
Utah, University of	3
Utah State Agricultural College	1
Villa Maria College	1
Virginia Military Institute	3
Virginia, University of	4
Wake Forest College	1
Washington College	7
Washington University	1
Washington & Jefferson College	4
Washington and Lee University	1
Western Maryland College	20
Westminster College	1
West Virginia Institute of Technology	1
West Virginia University	11
West Virginia Wesleyan College	1
William & Mary, College of	1
Williams College	1
Wisconsin, University of	1
Wooster, College of	1
Yale University	2

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(Term beginning July 1, 1945 and ending June 30, 1946)

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(Here state amount or describe property)

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(Here state amount or describe property)

THE UNIVERSITY OF MARYLAND SCHOOL OF NURSING

The University of Maryland School for Nurses was established in the year 1889. Since that time it has been an integral part of the University of Maryland, coming under the same government. It is a non-sectarian school, the only religious services being morning prayers.

The University Hospital is a general hospital containing about 435 beds. It is equipped to give young women a thorough course of instruction and practice in all phases of nursing.

Programs Offered: The programs of study of the school are planned for two groups of students: (a) the five-year group, (b) the 36-month group.

The requirements for admission to the five-year program of the School of Nursing are the same as for other colleges of the University. The completion of this course entitles the student to the degree of Bachelor of Science from the University of Maryland and to the diploma of the University Hospital School of Nursing.

The requirements for admission to the 36-month program are the satisfactory completion of an academic course in an approved high school. The completion of this course entitles the student to the diploma of the University of Maryland School of Nursing. Blank certificates will be furnished upon application to the Director of the School of Nursing.

MERCY HOSPITAL SCHOOL OF NURSING

The Mercy Hospital School of Nursing was established in 1899 and incorporated on December 23, 1901. It is an integral part of the Mercy Hospital and is under the same government. Mercy Hospital affords exceptional advantages for the education of nurses. It is a general hospital containing 348 beds, and offers opportunities for a thorough and varied experience. By its institutional affiliation with the University of Maryland it secures professors who give to the student the results of their training and experience in the fields of the medical and affiliated sciences.

The University of Maryland, in affiliation with the Mercy Hospital School of Nursing, offers a five year combined Academic and Nursing program. The completion of this course entitles the student to the degree of Bachelor of Science from the University of Maryland, and to the diploma of the Mercy Hospital School of Nursing. Graduate nurses who hold college degrees are greatly in demand, especially for positions in administration and teaching institutions. This program consequently offers a distinct advantage.

INDEX TO PERSONAL NAMES

Abell, Harry Davis, 99, 109
Acton, Conrad B., 15, 62, 63
Adams, Thurston R., 13, 22, 27, 38, 71, 73, 74, 77, 79, 115
Agnesine, Sister M., 35
Albrittain, J. Warren, 17, 28, 81
Alecce, Angelo Andrew, 111
Allen, Gladys Martha, 99, 109
Allison, George Malcolm, 111
Alvarez, José Alberto, 90, 92, 94
Amberson, William R., 10, 11, 60
Amlicke, Jeanne Dorothy, 97, 107
Amos, Delia G., 22
Amsterdam, Benjamin, 95, 102, 103, 106
Anchell, Melvin, 90, 92, 94
Andersch, Marie A., 15, 63, 66
Anderson, A. Russell, 15, 67
Anderson, Franklin B., 12, 22, 40, 76, 77
Anderson, George Hagan, 24, 95, 102, 103, 106
Anderson, Rubert S., 13, 60
Anthony, James Elmer, Jr., 99, 109
Aponte, Joseph Louis, 111
Appleby, George S., 27, 40
Applegarth, Eva, 37
Ard, Robert Wilson, 111
Ardinger, Joseph Stanley, Jr., 90, 92, 94
Arnick, Eleanor, 37
Arnold, Gayle Gardner, 95, 102, 103, 106
Arnold, James G., Jr., 14, 22, 30, 39, 78
Arnold, Jesse Hoyt, Jr., 97, 107
Ashman, Leon, 17, 36, 63, 65
Atkins, John L., 17, 64
Audet, Charles Henry, Jr., 97, 107
Audet, Robert Joseph, 97, 107
Auld, David, 111
Auld, Virginia M., 20
Aycock, Thomas B., 10, 11, 22, 30, 38, 40, 71, 73, 115
Ayd, Frank Joseph, Jr., 95, 102, 103, 106

Bacon, Arthur Maynard, Jr., 90, 92, 94
Baetjer, Walter A., 12, 21, 63
Baggett, Joseph W., 24, 95, 102, 103, 106
Baggott, Bartus T., 32
Bagley, Charles, Jr., 10, 11, 22, 30, 39, 40, 71, 78
Bailey, Claude F., 35, 95, 102, 103, 106
Baker, Frank William, Jr., 111
Ballard, Margaret B., 14, 28, 80
Ballina, Jones B., 17, 28, 81
Banker, Jane Louise, 20
Bannen, William James, Jr., 97, 107
Barker, David Hargis, 95, 102, 103, 106
Barnes, Thomas Gordon, II, 24, 95, 102, 103, 106
Barnett, Donald J., 17, 21, 22, 24, 83
Baroody, Philip Charles, 95, 102, 103, 106
Bauer, Robert Edward, 97, 107
Bayley, George, 36
Baylus, M., 27
Beatrice, Sister M., 30
Beatty, John Orville, 99, 109
Beck, Harvey, G., 11, 31, 62
Beck, Harry McBrine, 36
Beck, Nathaniel M., 17, 35, 63, 67
Beckett, Robert Lea, 111
Behr, Eleanor, 33
Belemer, J. J., 39
Bell, David Fowler, Jr., 35, 95, 102, 103, 106
Bell, Frederick K., 20, 61
Bell, Houston Lesher, 34, 90, 92, 94
Benavent, Walter José, 97, 107
Benson, John Fisher, 99, 109
Bentz, Ruth Alice, 99
Berdiansky, Benjamin, 95, 102, 103, 106
Berggreen, Raymond George, 99, 109
Bergland, J. McFarland, 12, 80
Berke, Joseph B., 39
Berman, Sidney, 25
Berry, Robert Z., 17, 34, 72
Beyer, David Henry, 111
Bieren, Roland E., 82
Bimestefer, L. W., 39
Bindemann, William Wylie, 99, 109
Bisanar, James Milton, 111
Bispham, W. N., 15
Blake, Charles F., 11, 30, 31, 37, 74, 77
Blank, H. Robert, 25
Blevins, Joseph Wendell, 99, 109
Bloxam, John Madison, III, 90, 92, 94
Blum, Louis V., 26
Blumberg, Joseph M., 17, 28, 64, 66
Bond, David Buckey, 111
Bongardt, Henry F., 13, 30, 35, 71, 74
Bonifant, Alfred Dement, 97, 107
Boone, Reece, R., Jr., 24
Bordley, John, 39
Bowe, Dudley P., 14, 28, 80
Bowie, Harry C., 15, 58, 72
Bowyer, Thomas S., 15, 28, 82
Boyd, C. Holmes, 38
Boyd, Kenneth B., 14, 28, 80, 82
Bradley, J. Edmund, 13, 21, 68
Bradshaw, Douglas E., 24
Brady, Charles Eldon, 90, 92, 94
Brady, Frank Joseph, 90, 92, 94
Brady, Leo, 13, 22, 82
Brager, Simon H., 13, 30, 35, 37, 71, 73
Bramble, Charles E., 33
Brandes, Herbert Gibbs, 90, 92, 94
Brannen, Joseph Harrison, 95, 102, 103, 106
Brantigan, Otto C., 10, 11, 38, 58, 59, 71, 73, 74
Braun-Kelly, Alma C., 17, 23, 24, 81
Brendle, William Kendig, 35, 96, 102, 103, 106
Bressler, Frank C., 42
Brickner, John George, III, 97, 107
Briele, Henry A., 17, 72
Brill, Herbert Gibbs, 92
Brill, Warren Daniel, 90, 94
Briscoe, Ruth Lee, 42
Bronstein, Eugene Leonard, 111
Brookes, Thomas R., 9

Brosemer, Lowell Russell, 97, 107
Brouillet, George H., 16, 27, 72
Brown, Ann Virginia, 16, 61
Brown, Eli Matthew, 97, 107
Brown, John Ronald, 111
Brown, Richard James, 90, 92, 94
Brown, Robert Ray, 97, 107
Brown, Thomas R., 40
Browne, Kenneth M., 23
Bryant, Samuel H., 28
Bubert, Howard M., 10, 13, 26, 63
Buchness, A. V., 17, 72
Buchness, David Joseph, 111
Buchness, John Michael, 111
Buckey, Robert Bruce, 90, 92, 94
Buckner, Louis Paddon, 97, 107
Buettner, Henry F., 16, 60
Bullock, John Boyd, 111
Bulluck, Matt Heyer, 111
Buppert, Stuart, 31, 37
Burns, Albert, 115
Burns, Harold H., 16, 30, 35, 72
Burns, J. Howard, 32, 36
Butler, Charles Leavitt, 24, 96, 102, 103, 106
Byerly, M. Paul, 16, 25, 26, 68
Byrd, Harry Clifton, 9, 10, 115
Byrne, Robert Francis, 96, 102, 103, 106

Caimovitz, Robert, 111
Caldwell, Lucile, J., 16, 75
Callahan, Daniel Harry, Jr., 90, 92, 94
Callender, George R., Jr., 24, 96, 102, 103, 106
Camp, Harry W., Jr., 35
Camponeschi, Oscar Wilde, 96, 102, 103, 106
Cano, Harold Vernon, 97, 107
Canter, Nathan, 96, 102, 103, 106
Carey, T. Nelson, 10, 12, 21, 32, 52, 63
Carl, Mary Kathryn, 111
Carliner, Paul E., 17, 64
Carouge, Gilbert Morris, 99, 109
Carr, C. Jelleff, 10, 12, 61
Carr, Charles Edwin, Jr., 90, 92, 94
Carr, William Francis, 97, 107
Celeste, Sister M., 30
Chambers, Earl L., 32
Chambers, Thomas R., 12, 30, 71
Chance, L. T., 17, 72
Chapman, Norman Stanley, 111
Chapman, Ross McC., 10, 11, 21, 67
Chaput, Charles Dupré, 23, 90, 92, 94
Chase, Henry Vincent, 99, 109
Chelton, Louis Guy, 111
Cheney, William S., 17, 72
Chenowith, Robert F., 17, 72, 73
Chion, Mary E., 18, 60
Christopher, Thomas West, 97, 107
Cintrón, Miguel, 90, 92, 94
Clapp, Clyde A., 10, 11, 21, 22, 83
Clark, Mary Dorcas, 24, 96, 102, 103, 106
Clarke, Carl Dame, 12, 84
Cloninger, Rowell Connor, 23, 24, 90, 92, 94
Clopter, Charlotte, 33
Clough, Paul W., 12, 62
Clyman, Sidney Gary, 97, 107
Coberth, M. E., 40
Coblentz, Richard G., 11, 22, 30, 39, 78
Codd, Francis Ignatius, 97, 107
Coffey, Michael Joseph, 99, 109
Cohen, Amelia R., 84
Cohen, Bernard Stanley, 99, 109
Cohen, Cecelia E., 56
Cohen, Eleanor S., 56
Cohen, Irvin, 99, 109
Cohen, Israel, 56
Cohn, Jerome Elias, 97, 108
Cole, William P., 9
Collenberg, H. T., 33
Compton, Beverly C., 10, 14, 21, 22, 27, 28, 39, 78, 82
Condron, James Frank, 111
Conner, Eugene Hayward, 24, 96, 102, 103, 106
Connor, Thomas Byrne, 97, 108
Cook, Elmer E., Jr., 34
Cook, Sallie, 24, 96, 102, 103, 106
Cooper, Harry Douglas, 99, 109
Cooper, William Benjamin, Jr., 99, 109
Copeland, Herbert Bernard, Jr., 90, 92, 94
Copeland, Murray M., 13, 29, 39, 71, 78
Corasaniti, Rita Anne, 97, 108
Cornbrooks, Ernest I., Jr., 16, 28, 39, 78, 82
Corzine, William Jenkins, Jr., 99, 109
Cottel, Charles E., 23
Cotter, Edward F., 16, 62, 69
Cotton, Albertus, 10, 11, 31, 33, 35, 40, 75, 83
Coughlan, Stuart G., 16, 72
Coultas, Elizabeth Louise, 99, 109
Councill, W. A. H., 14, 22, 27, 76
Covington, E Eugene, 14, 29, 30, 33, 37, 58, 59, 71, 73, 78
Cowley, R. Adams, 23, 24, 90, 92, 94
Crawford, John, 42
Crawford, Robert C., 18, 64
Crecraft, Harold James, 111
Cross, Richard Joseph, Jr., 97, 108
Crouch, J. Frank, 10
Crouch, Walter Lee, 108
Culver, Samuel H., 18, 72
Cunningham, Raymond M., 18, 72
Currie, Dwight M., 18, 72
Cushing, J. G. N., 16, 67
Cushner, Irvin Morris, 99, 109
Cutler, Preston R., 18, 72

Dalton, James Breckenridge, Jr., 111
Dann, Daniel I., 18, 28, 81
D'Antonio, Joseph, 97, 108
Daue, Edwin O., Jr., 18, 64
Davies, Ruth Camille, 99
Davis, John Bernard, 96
Davis, John R., 64
Davis, Ralph Fletcher, 96
Davidson, Charles N., 13, 21, 22, 83
Davidson, Nachman, 18, 64
Davies, Ross, 13, 70
Davis, Carl L., 10, 11, 59, 60
Davis, E. Hollister, 10, 18
Davis, George H., 18, 81
Davis, John Bernard, 102, 103, 106
Davis, John R., Jr., 18, 32, 35

Davis, John Staige, 40
Davis, Ralph Fletcher, 102, 103, 106
de Alba, Eduardo, Jr., 96, 102, 103, 106
Debuskey, B. Matthew, 16, 39, 68
deCamp, B. Farson, 20, 61
Deckert, W. Allen, 16, 28, 72, 73, 81, 82
De Luca, Joseph, 23
Demarco, S., Jr., 16, 30, 35
Dempsey, Raymond Joseph, 111
Dennis, John M., 24, 96, 102, 103, 106
Dentry, Elizabeth Anne Gordon, 99, 109
Diaz-Corazo, José, 97, 108
Dickey, Francis G., 16, 25, 63, 67
Diehl, William K., 16, 28, 29, 39, 78, 82
Diggs, Everett S., 18, 28, 78, 82
Dixon, D. McClelland, 16, 28, 62, 80, 81
Dodd, Patricia, 23, 90, 92, 94
Dodd, William A., 36
Dodds, Robert Arthur, 111
Doeller, Charles H., Jr., 18, 32, 33, 36, 81
Doenges, John P., 24, 96, 102, 103, 106
Donahoo, H. C., Jr., 18
Donohoo, Bernard W., 18
Dorman, Parker Sturgis, 99, 109
Dorman, William, 39
Dorsey, Brice M., 11, 28, 79
Dorsey, R. Tipton, 17
Douglass, Louis H., 10, 11, 21, 22, 25, 38, 80, 81, 115
Doukas, James A., 90, 92, 94
Drake, Miles E., 23, 24, 90, 91, 92, 94
Driggs, Guy Kenneth, 97, 108
Duffy, William C., 32, 33, 36
DuMez, Andrew G., 10
Dumler, John C., 14, 28, 39, 78, 82
Dunn, Charles Gilbert, 111
Dunne, Thomas B., 23
Dunnigan, Wm. C., 30
Duvall, Robert Caywood, Jr., 99, 109

Eareckson, Vincent Offley, Jr., 97, 108
Earnhardt, Herman Lee, Jr., 108
Eastland, J. Sheldon, 13, 31, 63, 115
Eaton, Jay Warren, 97, 108
Eavey, James Lee, 97, 108
Ebeling, William C., III, 23, 24, 90, 91, 92, 94
Edlow, Ernest S., 16, 32, 33, 36, 82
Edmunds, Page, 10, 11, 22, 71, 74, 79
Edwards, Charles Reid, 10, 11, 21, 22, 40, 71, 73, 74, 115
Edwards, Monte, 11, 22, 27, 39, 71, 77
Edwards, Paul Wilburn, III, 111
Elgin, William W., 14, 67
Elias, Thomas Glenn, 23, 90, 92, 94
Elliott, Ruth, 74
Ellis, Francis, A., 13, 31, 36, 75
Emig, Otto R., 23
Ensor, Robert Ellwood, 111
Eppes, Williford, 99, 109
Ermshar, H. F., 26
Erwin, J. J., 14, 32, 33, 36, 82
Evans, F. Gaynor, 13
Evans, John Ebenezer, Jr., 99, 109
Evans, William Ellsworth, Jr., 12, 61
Everett, Houston, 14, 82
Everett, John Thomas, 90, 92, 94
Ewing, Jane, 40

Fankhouser, Russell L., 24
Faraino, Frank Anthony, 99, 109
Fargo, Leon K., 14, 31, 35, 76
Farkas, Robert William, 90, 92, 94
Fearing, William L., 16, 25, 69
Feaster, James Henry, Jr., 90, 92, 94
Fedor, Edward John, 111
Feldman, Maurice, Jr., 13, 32, 36, 67, 90, 91, 92, 94
Figge, Frank H. J., 10, 12, 58, 59
Fine, Morris, A., 18, 25, 63, 77
Fineman, Jerome, 16, 26, 32, 36, 68
Finkelstein, A. H., 13, 21, 26, 68
Fischer, Joseph Samuel, 97, 108
Fisher, Donald Ernst, 99, 109
Fisher, George William, 97, 108
Fitzpatrick, Mary, 29
Fitzpatrick, Vincent de Paul, Jr., 35, 96, 102, 103, 106
Flack, Horace, E., 115
Fleck, Harvey K., 11, 31, 83, 115
Flynn, Philip D., 16, 63
Foard, Wilbur Harper, 24, 90, 92, 94
Foley, J. J., 31
Foley, M. Jane, 34
Ford, Frank R., 39
Forrer, Gordon Randolph, 99, 109
Fort, Wetherbee, 14, 32, 63, 115
Foster, Herbert M., 18, 72
Foster, William Leicester, 96, 102, 103, 106
Fox, Samuel L., 18, 27, 36, 76
Frank, Bertha Rayner, 55
Frank, Samuel Leon, 55
Frank, William Henry, 96, 102, 103, 106
Fravel, Charles Richard, 111
Freedom, Leon, 12, 21, 25, 62, 69
Freeman, Irving, 16, 25, 26, 35, 63
Friedenwald, Edgar B., 11, 32, 36, 68
Friedenwald, Harry, 10, 31, 40
Friedenwald, Jonas, 15, 83
Friedman, Asher Arthur, 97, 109
Frye, Paul Eugene, 97, 108
Funk, Audrey M., 18, 64, 66
Fusco, J. D., 31, 37
Futterman, Perry, 24, 90, 92, 94

Gaby, Samuel David, 97, 108
Gaither, A. Bradley, 55
Gaither, Mrs. A. Bradley, 54
Gakenheimer, William Alfred, 99, 109
Galvin, Thomas K., 11, 30, 32, 36, 82, 115
Gamble, John Reeves, Jr., 97, 108
Ganey, Joseph Brannen, 96, 102, 103, 106
García y García, José Antonio, 90, 92, 94
Gardner, Maud M., 40
Gardner, Robert Kline, 99, 109
Gardner, William S., 10, 32
Gareis, L. Calvin, 18, 28, 81
Garlick, William M., 16, 35, 72
Garvey, Mary Gertrude, 33
Gaskell, Jason H., 18, 31, 35, 75
Gassaway, Franklyn Drennan, 90, 92, 94

Ganey, Joseph B., 24
Geddes, David Kofoid, 99, 109
Gehrmann, Mrs. Frederica, 56
Gellman, Moses, 12, 22, 27, 40, 75
Gentry, William Daniel, Jr., 97, 108
Geraghty, Frank J., 14, 63, 115
Geraghty, William R., 18, 72
Gerlach, James Johnson, 97, 108
Gerlach, Jane Knowles, 99, 109
Gershenson, Betty, 26
Gerwig, Walter H., Jr., 18, 72
Gibbs, Robert L., 18, 64
Gichner, Joseph E., 11, 21, 62
Giglia, Toney R., 34
Gillis, Andrew C., 10, 11, 32, 36, 69
Gillis, Francis W., 14, 31, 35, 77
Gillis, Marion H., 18, 83
Gillson, Edward Michael, 99, 110
Ginsberg, Leon, 40
Givens, Austin Edward, 96, 102, 103, 106
Gleason, Donald F., 24
Glick, Samuel S., 14, 26, 68
Godlove, John Carlton, 90, 92, 94
Goetz, Abraham Aaron, 97, 108
Goldman, A., 26
Goldsborough, Charles R., 15, 25, 63
Goldsmith, Harry, 13, 25, 32, 36, 67
Goldstein, Albert E., 14, 61, 115
Goldstein, Harold, 28
Goldstein, Marvin, 24, 90, 91, 92, 94
Golley, K. W., 32
Golambek, Leonard Harry, 111
Goodman, Julius, 30
Goodwin, T. Campbell, 12, 38, 68
Gore, Robert J., 18, 26
Govatos, George, 16, 72, 73
Graff, Henry F., 13, 21, 22, 29, 83
Graham, Robert L., 16
Granoff, H. L., 18, 33, 36, 82
Grant, Bowie Linn, 111
Grau, Edward Gordon, 99, 110
Gray, Harry William, 98, 108
Graybill, Alice Katherine, 111
Green, James William, 111
Greenfeld, William, 33
Greenfield, Duane Leonard, 98, 108
Greenleaf, Helen Emily, 96, 102, 103, 106
Greiner, D. James, 13, 61
Grenzer, William H., 18, 38, 63
Griffin, James Edward, 99
Griswold, Robertson, 115
Gross, Joseph B., 18, 64
Grossman, Louis Ward, 99, 110
Grove, Donald B., 18, 72
Grumbine, Francis Levine, 90, 92, 94
Gülck, Georg K., 18, 61
Gundry, Alfred T., 115
Gundry, Lewis P., 13, 25, 26, 63
Guthrie, William Wilkinson, 90, 92, 94
Guy, Ernest Gordon, 24, 90, 92, 94
Guyther, Joseph Roy, 34

Haase, Frederick Robert, 99, 110
Hagan, William B., 23
Hahn, Robert Roland, 99, 110
Hahn, William E., 12, 79
Hale, George Clyde, Jr., 111
Hall, Arthur Thomas, Jr., 96, 102, 104, 106
Hall, Howard Essex, 99, 110
Hamburger, Daniel Oscar, 96, 102, 104, 106
Hamill, James Edward, 90, 92, 94
Hamrick, George Vincent, 111
Hankins, John Roland, 111
Hankin, Samuel J., 18, 25, 26, 64
Hannan, Alice R., 37
Hannan, Leon, 37
Hanrahan, Edward M., Jr., 16, 38, 71
Hansen, Leland Jay, 98, 108
Hard, Walter L., 13
Hardin, Henry Carter, Jr., 98, 108
Harkins, Henry N., 38
Harley, John Barker, 98, 108
Harne, O. G., 10, 12, 59, 60
Harne, William G., 61
Harris, Paul Black, 111
Harrison, Thurston, 39
Hartman, Oscar, 18, 28, 81
Hatchel, Frank W., 10, 11, 60
Haught, John S., 18, 23, 24, 28, 82
Hawkins, Charles William, 98, 108
Haws, John M., 38
Hayden, Richard Carroll, 90, 92, 94
Hayleck, Mary L., 16, 68
Hayward, Eugene, 115
Haynes, Howard Harry, Jr., 96, 102, 104, 106
Healy, Robert F., 18, 72, 73
Hearne, Calvin Beck, 99, 110
Hedrick, John A., 35, 96, 102, 104, 106
Hedrick, Thomas A., 18, 26, 68
Hefner, Charles Arthur, 98, 108
Heldrick, Frederick Joseph, Jr., 111
Helfrich, Raymond F., 14, 30, 35, 71, 74
Helfrich, William G., 16, 26, 63
Hellen, L. Ann, 18, 64, 66
Helms, Samuel T., 16, 63, 66, 77
Hendrick, James W., 18, 24, 72
Hendrickson, Edwin Okey, III, 98, 108
Henneberger, Lowell P., 38
Hennessy, John Francis, 96, 102, 104, 106
Herold, Paul Garmer, 90, 92, 94
Herrick, Stanley Edward, Jr., 96, 102, 104, 106
Herrmann, Albert Casper, 96, 102, 104, 106
Hersperger, W. Grafton, 16, 26, 63
Hetrick, Augustus Christian, 57
Hetrick, Bruce Hayward, 57
Hetrick, Horace Bruce, 57
Hibbitts, John T., 14, 28, 39, 82
Highstein, Benjamin, 18, 27, 75
Hill, Harry Edward, 98, 108
Hintz, Carl W., 42
Hirschfeld, John H., 18, 76
Hitchcock, Charles M., 55
Hobart, Richard Loren, Jr., 111
Hobelmann, Charles Frederick, 34, 90, 92, 94
Hogan, John F., 14, 27, 76
Hogan, John Francis, Jr., 99, 110
Hohman, Leslie B., 15, 67
Holbrook, William Addison, Jr., 24, 96, 102, 104, 106

Holden, Frank A., 16, 29, 83
Hollander, Mark, 18, 27, 75
Hölljes, Henry Wirt Duvall, 24, 90, 92, 94
Holloway, William Jackson, 111
Honigman, Alvin H., 20, 24
Hooper, Z. Vance, 15, 25, 67
Hoover, Richard D., 24
Hopkins, John V., 18, 27, 75
Horine, Cyrus F., 12, 71
Horn, Helen Amelia, 20, 24, 62, 90, 92, 94
Hornbrook, Francis E., 34
Hougbton, James Francis, 99, 110
Houska, Henry John, 90, 92, 94
Howell, Clewell, 15, 68
Howell, Roger, 10
Hoyos-Napoleoni, Hector Anthony, 96, 102, 104, 106
Hudson, Rollin C., 18, 27, 75
Hull, Harry C., 13, 38, 58, 71
Hulla, Jaroslav, 28, 81
Humphries, William C., 18, 76
Hundley, J. Mason, Jr., 10, 11, 21, 22, 25, 27, 28, 39, 78, 79, 82
Hunter, J. Paulson, 98, 108
Hunter, Robert Carl, 99, 110
Hussey, Raymond, 12, 21
Hutchins, Elliott H., 10, 11, 30, 71, 74
Hutchins, Harry, 96, 102, 104, 106
Hyman, Calvin, 16, 72, 73
Hyman, Nathan Bernard, 98, 108

Imbrie, David Ellwond, 99, 110
Ingram, Charles H., 23, 24
Ingram, Phyllis Ray, 90, 92, 94
Ingram, William Braxton, 90, 93, 94
Inman, B. Wallace, 16, 31, 37, 79
Inman, Conrad L., 16, 37, 79
Insley, Marion Clarence, Jr., 111
Ivamota, Harry K., 20, 61

Jacobson, Meyer, W., 16, 25, 26, 63
Jaffe, Albert, 14, 21, 26, 68
James, Oliver A., 18, 72
Jaroslav, Hulla, 18
Jennings, Erwin Reeves, 98, 108
Jennings, F. L., 11, 30, 71, 74
Jennings, Joye J., 16, 60
Jensen, Jacob R., 18, 28, 81
Jeppi, Joseph V., 31, 37
Jeradi, Joseph V., 16, 30, 35, 72
Jernigan, John Mayo, Jr., 24, 90, 93, 94
Jernigan, Lane McDermott, 99, 110
Jewett, Hugh, 18, 39, 77
Johnson, Edward S., 12, 71
Johnson, Elizabeth, 33
Johnson, Marius P., 19, 38
Johnson, Melvin A., 24
Johnson, William R., 16, 27, 71, 73
Jones, Bobby Lee, 90, 93, 94
Josephs, Hugh W., 12, 38, 68
Joslin, C. Loring, 10, 11, 21, 25, 68
Judd, Allyn Francis, 99, 110
Judd, Charles C. W., 12, 39, 63

Kadan, Ferd E., 19, 28, 81
Kahn, M. Randolph, 11
Kalafat, John George, 111
Kallins, Edward S., 16, 26, 63
Kaltreider, D. Frank, 16, 28, 80, 81
Kammer, William H., Jr., 19, 32, 35, 64
Kanof, Joseph I., 15
Kappelman, Melvin D., 19, 28, 81
Karfgin, Arthur, 19, 64
Karfgin, Walter E., 26
Karlinsky, Leo, 55
Karlinsky, Mrs. Ray Mintz, 55
Karns, Clyde F., 16, 72, 73
Karns, James R., 19, 64
Kastner, Lee Norman, 111
Katzenstein, Lawrence, 19, 63
Kaufman, Raymond Henry, 111
Kaufman, Vernon D., 13, 79
Kayser, Fayne A., 19, 31, 36, 76
Keister, Stephen Ridinger, 96, 102, 104, 106
Kelly, Alexander Palmer, Jr., 35, 96, 102, 104, 106
Kemler, Joseph I., 15, 31, 83
Kemp, Katherine Virdin, 111
Kennedy, Carl Hubert, Jr., 111
Kenworthy, Richard Albert, 111, 96, 102, 104, 106
Keown, Lauriston L., 19, 26, 68
Kevin, Sister M., 33
Kiel, August, 98, 108
Kilby, Walter L., 11, 22, 83
Kindell, Frank B., 15
King, John T., Jr., 38
Kinnamon, Howard F., Jr., 16, 72
Kirby, Francis J., 115
Kishpaugh, Marjorie Bird, 90, 93, 94
Kitlowski, Edward A., 10, 11, 38, 40, 71, 80
Klimes, Louis, F., 35, 36
Klinefelter, Harry F., Jr., 39
Knapp, Harry Grove Robert, 98, 108
Knapp, Hubert C., 32
Knerler, Charles W., 19, 64
Knotts, E. Paul, 9
Knowles, F. Edwin, Jr., 15, 22, 37, 83
Knox, Lawrence Joseph, 98, 108
Koch, Lillian Dorothy, 111
Kohn, Schuyler, G., 81
Kolman, Lester N., 16, 27, 75
Krahl, Vernon E., 16, 58, 59
Krantz, John C., Jr., 10, 11, 61
Krause, Louis A. M., 13, 21, 31, 39, 63, 84
Kreis, George Joseph, Jr., 90, 93, 94
Kremen, A., 16, 83
Kroll, Louis J., 19, 64, 65
Kurland, Leonard Terry, 24, 96, 102, 104, 106
Kunst, Florence Elizabeth, 111
Kyper, Frederick T., 19, 27, 39, 76

Lambert, Herman James, Jr., 90, 91, 93, 94
Lampley, William Askew, 90, 93, 94
Lang, Milton C., 16, 29, 83
Langeluttig, Harry Vernon, 15, 38, 63
Langworthy, Harry A., 39
Latimer, John Howard, 98, 108
Lavenstein, Arnold F., 16, 26, 68

Law, Ruth B., 20
Lawler, Lillian, 33
Leach, C. Edward, 16, 26, 63
Leary, John Sylvester, Jr., 111
Lederman, Alfred S., 19, 25, 67
Lee, F. C., 38
Legge, John E., 14, 21, 25, 32, 63
Legge, Kenneth D., 12, 31, 35, 76
Legum, Samuel, 16, 25, 63, 65
Leitz, T. Frederick, 32
Lemen, Daniel Bair, 96, 102, 104, 106
Leograndis, Stephen C., 111
Lerman, Philip H., 90, 93, 94
Lerner, Philip F., 15, 16, 32, 36, 69
Leung, Bernard, 99, 110
Levickas, Herbert Joseph, 98, 108
Levin, H. Edmund, 17, 25, 60, 63
Levin, Manuel, 26
Levin, Norman, 99, 110
Levine, Stuart Charles, 90, 93, 94
Levy, Kurt, 17, 25, 63
Lewis, Frances F., 29
Lilienfeld, Abraham Morris, 90, 93, 94
Linthicum, Charles Milton, 35, 96, 102, 104, 106
Lipin, Raymond J., 35
Li Pira, Joseph Francis, 99, 110
Lisansky, Ephraim T., 19, 26, 62, 64
Lithgow, Charles Henry, 111
Little, Luther E., 15, 38, 71, 74
Littlefield, James Beaton, 90, 93, 95
Locher, R. W., 13, 30, 71
Lockard, G. Carroll, 10, 12, 21, 25, 62, 65, 79
Loewald, Hans W., 15, 25, 67
Loker, F. Ford, 19, 30, 72
Long, Edgar F., 10
Long, William B., Jr., 19, 72
Looper, Edward A., 10, 12, 21, 22, 40, 76
Love, William S., Jr., 13, 21, 26, 62, 63
Lowe, William C., 19, 32, 35, 64
Lutz, John F., 14, 59, 60
Lynn, William B., 23

Maccubbin, H. Pearce, 19
Mace, Luther M., 24
Macgowan, Birkhead, 31
Machata, Francis Karl, 99, 110
Machen, John W., 19, 36, 69
Macht, Allan Harris, 98, 108
Mack, Ernest W., 19, 72
Mack, Harry Patterson, 111
Maginnis, Helen I., 19, 28, 82
Maguire, Henry Francis, 96, 102, 104, 106
Maholick, Leonard Thomas, 98, 108
Maldeis, Howard J., 10, 13, 61, 63, 70
Mallis, Nicholas, 111
Mandeville, Frederick B., 13, 38, 71
Manieri, Frank V., 26
Mannino, Peter Paul, 99, 110
Mansberger, Arlie Roland, Jr., 99, 110
Mansdorfer, G. Bowers, 15, 32, 36, 68
Mansfield, W. Kenneth, Jr., 19, 28, 81
Markley, Raymond Law, Jr., 98, 108
Marks, A. Robert, 19, 23, 24, 26, 68
Marshall, Charles Benton, Jr., 98, 108
Marshall, Joseph, 25
Martin, Glenn L., 9
Martin, John S., 24
Marvel, N. Clyde, 13, 30, 71, 74
Maseritz, I. H., 17, 31, 35, 75
Massenburg, George Yellott, 98, 108
Mattern, Carl Frederick Theodore, 99, 110
Matthews, Burton Vincent, 111
Matthews, Otto Stevens, 108
Maxson, Charles W., 13, 30, 71, 74
Maxwell, George Alexander, Jr., 90, 93, 95
May, Robert Eugene, 98, 108
Mays, Howard B., 17, 22, 27, 39, 62, 77
Mazer, Maxwell L., 19, 28, 81
McAlpine, James G., 10, 13, 60
McCaffery, Henrietta, 33
McCarthy, Harry B., 40
McCauley, Betty Jane, 99, 112
McCrumb, Fred Rodgers, Jr., 112
McElfatrick, George Charles, 98, 108
McElwain, Howard B., 19, 30, 72
McFaul, William N., Jr., 30
McIntosh, Edith R., 42
McKenzie, W. Raymond, 15, 31, 76, 115
McKinney, William W., 19, 78
McLanahan, Samuel, Jr., 19, 38, 72
McLaughlin, Francis, 17, 67
McLean, George, 14, 31, 63, 65, 115
McMillin, Parker J., 38
McNally, Hugh B., 15, 22, 28, 38, 80, 81
McNinch, James Robinson, Jr., 24, 96, 102, 104, 106
McPherson, Thomas Cotesworth, 98, 108
McWilliams, Clarence Emanuel, Jr., 98, 108
Mearns, Robert B., 19, 64
Mech, Karl F., 19, 62
Medairy, George C., 19, 36, 69
Meranski, Israel P., 19, 26, 68
Merkel, Walter C., 14, 33, 61
Meyerowitz, Joseph R., 26
Miksinski, B. W., 39
Mildred, Sister M., 30
Millan, Lyle J., 15, 22, 27, 76
Miller, Clarence Stockton, 96, 102, 104, 106
Miller, Sydney R., 13, 63
Milloff, Bernard, 90, 93, 95
Mintzer, Donald Willis, 24, 90, 93, 95
Mintzer, Joseph Herman, 98, 108
Mitchell, George W., 31
Mitchell, John Armitage, 98, 108
Mitchell, Robert B., Jr., 17, 26, 63
Mitchell, Wallace Herttell, 99, 110
Mitchell, William A., 19, 28, 81
Mohler, David Ignatius, Jr., 112
Moores, J. Duer, 17, 29, 72, 78
Morgan, Zachariah, 10, 14, 21, 25, 67
Morris, Frank A., 36
Morris, Frank K., 17, 32, 33, 82
Morrison, John Edward, 98, 108
Morrison, John H., 19, 81
Morrison, Samuel, 14, 25, 67
Morrison, Theodore H., 12, 32, 67
Morrow, John Gordon, Jr., 99, 110
Morrow, Thomas Lacy, Jr., 90, 93, 95

Mosberg, William Henry, Jr., 24, 90, 93, 95
Muller, S. Edwin, 19, 26, 32, 35, 64, 66
Munch, James C., 15, 84
Murdock, Harry M., 14, 21, 67
Muse, Joseph E., Jr., 19, 26, 64
Musser, Ruth, 17, 61
Myers, John A., 17, 63, 66, 67
Myers, Paul Robert, 35, 96, 102, 104, 106

Nachlas, Nathan Edward, 99, 110
Nataro, Jerome Paul, 98, 108
Nelson, James W., 14, 30, 35, 36, 71, 74
Nelson, Robert Edwin, 98, 108
Newell, Edward Alphonso, 112
Newell, H. W., 14, 25, 67
Newell, Josephine Evelyn, 112
Nichols, Pomeroy, Jr., 98, 108
Niswander, Guy Donald, 112
Norment, Richard B., III, 24, 90, 93, 95
North, Ellsworth Howard, Jr., 98, 108
Norris, Frank K., 80
Norris, J. Edward, 19, 28, 81
Norton, Alfred Simpson, 96, 102, 104, 107
Novak, Emil, 13, 80, 81, 115
Novey, M. Alexander, 14, 22, 80, 81
Novey, Samuel, 17, 67
Nurkin, Joseph, 27
Nuttle, Harry H., 9

O'Brien, Mary J., 22, 74
O'Connor, John A., 30
O'Dea, Daniel Patrick, 112
O'Donnell, Charles Francis, 34, 90, 93, 95
O'Donnell, Charles P., 34
Ogden, Frank N., 15, 61, 115
O'Hare, James Stewart, 98, 108
O'Neill, Allen Jay, 96, 102, 104, 107
O'Rourk, Thomas R., 10, 12, 21, 22, 27, 39, 76, 77
Orrison, William Werner, 98, 108
Ortega, Luis, 39
Osborne, Horace Henry, 98, 108
Osborne, William Wilson, 34, 90, 93, 95
Oster, Robert H., 13, 60
Ott, Roy Hamilton, Jr., 24, 96, 102, 104, 106
Owen, Arthur John, 96, 107
Owings, James C., 38
Owens, J. Edward, 19
Owens, Richard S., 77

Pacienza, F. A., 31, 37
Padussis, Stephen Konstant, 112
Palese, John M., 34
Palmer, Margaret Virginia, 19, 20, 23, 64
Parelhoff, Merrill Elliott, 112
Parham, Sumner Malone, 24, 96, 102, 104, 107
Park, William Favre, 98, 108
Parr, William A., 19, 77
Parsons, John W., 39
Paschal, Jarvis D., 23
Patterson, Carl Norris, 34, 90, 93, 95
Patterson, J. Milton, 9
Patterson, Robert U., 10, 21
Paul, Earl Rupert, 98, 108
Paula Marie, Sister, 33
Peake, C. W., 10, 13, 71, 73
Peck, Clemmer Marcus, 98, 109
Peck, Robert De Witt, 96, 102, 104, 107
Pels, Isaac R., 39
Pertz, Elden Hobart, 99, 110
Pessagno, D. J., 12, 30, 71
Peters, H. Raymond, 10, 12, 30, 31, 33, 35, 62, 66
Petersen, Phyllis Ann, 112
Pfeil, E. Thornton, Jr., 23
Phelan, Patrick C., Jr., 19, 34, 72
Phelps, Winthrop M., 40
Philip, Sister M., 30
Phillips, David Lee, 99, 110
Phillips, Malcolm Dudley, 96, 102, 104, 107
Pierce, Leslie Harrell, 19, 25, 64
Pierpont, Edwin Lowell, 90, 93, 95
Piggott, John Burr, Jr., 100, 110
Pike, Warren Horton, Jr., 96, 102, 104, 107
Pincoffs, Maurice C., 12, 21, 30, 31, 35, 62
Platt, Julian Jay, 112
Platt, Lois Irene, 98, 109
Pollack, Sylvia L., 20
Polleyette, Carolyn W., 22
Pool, Champ Clark, 90, 93, 95
Post, William Reyman, 100, 110
Powell, Albert Milton, Jr., 112
Powell, Jack Hanson, Jr., 100, 110
Pratt, Louis John, 90, 93, 95
Preinkert, Alma H., 10
Proctor, Donald F., 39
Proctor, Samuel E., 19, 27, 72
Pushkin, Benjamin, 14, 25, 69
Pyle, J. Freeman, 10

Queen, J. Emmett, 19, 32, 34, 35, 64

Ramundo, Michael Raymond, 90, 93, 95
Randolph, Edward Burl, 90, 93, 95
Rasch, George Chesley, Jr., 100, 110
Raskin, Herbert Alfred, 112
Raskin, M., 31, 37
Rathbun, Howard K., 39
Rawlins, John Calvin, 98, 109
Reahl, Joseph Edward, 35, 96, 102, 104, 106
Reeder, J. Dawson, 10
Rees, David Thomas, Jr., 90, 93, 95
Reese, J. G. M., 10, 13, 21, 22, 38, 80, 81
Reichhardt, Marjorie Edna, 112
Reifschneider, Charles A., 10, 12, 38, 71, 73, 79
Reifschneider, Herbert E., 17, 58, 72, 79
Reimann, Dexter L., 17, 62, 66
Reisch, Milton, 98, 109
Reiter, Ralph Alan, 98, 109
Reiter, Robert A., 63, 65
Rennie, Thomas A. C., 38
Revell, Samuel T. R., 19, 64
Rhyne, Jimmie Lee, 112
Rich, Benjamin S., 15, 27, 31, 36, 40, 76, 77
Richards, Esther L., 38
Ridgely, I. O., 14, 30, 35, 71
Riely, Compton, 12, 22, 75
Rienhoff, William F., Jr., 15, 30, 71, 74
Ries, A. F., 115

Rigdon, Henry L., 19, 72
Riley, Eugene John, 90, 93, 95
Riley, Robert Annan, Jr., 98, 109
Robben, John O., 23, 24
Robbins, Morris Allen, 90, 93, 95
Roberts, James Alwin, 98, 109
Robinson, Daniel R., 17, 30, 35, 72
Robinson, Harry M., Jr., 10, 14, 26, 27, 63, 75
Robinson, Harry M., Sr., 12, 22, 27, 40, 75
Robinson, Ida Marion, 42
Robinson, J. Ben, 10
Robinson, William Henry, 24, 96, 102, 104, 107
Rockwell, Alice J., 25
Rodgers, William Ansley, 96, 102, 104, 107
Rodriguez, Edsel Antonio, 112
Rogers, Harry L., 13, 31, 33, 35, 40, 75
Rogers, Joseph Megeath, 100, 110
Rolando, Henry, 57
Rolfes, Harry Franklin, 34, 90, 93, 95
Roop, Donald J., 19, 32, 64
Rosenblatt, Leah, 96, 102, 104, 107
Rosenthal, John Lauchheimer, 96, 102, 104, 107
Rossberg, Robert Crittenden, 98, 109
Rosser, John Hays, 100, 110
Rothschild, Stanford Z., 9
Rowland, J. M. H., 10
Rubenstone, Albert Irving, 90, 93, 95
Rucker, Nancy Williams, 100
Rudo, Alvin David, 96, 102, 104, 107
Rudo, Marvin, 96, 102, 104, 107
Rudolph, Robert Lee, 112
Ruppert, Kathleen, S., 22
Ruzicka, Francis Frederick, Jr., 23, 26
Rysanek, William J., Jr., 33, 36

Sachs, Sidney Herman, 100, 110
Sacks, Milton S., 10, 14, 25, 62, 63, 66, 115
Sacks, Sidney, 98, 109
Sanchez, Hilarion, Jr., 35, 96, 102, 104, 107
Sanderson, William R., 57
Sargent, George F., 115
Savage, John E., 15, 22, 25, 28, 38, 80
Sayles, Harold A., 21
Scarborough, Clarence P., 19, 27, 72
Scavone, Edmond, 90, 93, 95
Schaefer, John F., 17, 72
Schapiro, Joseph Soloman, 100, 110
Scherr, Merle Sundrell, 112
Schmidt, Emil G., 10, 13, 61
Schmitz, William J., 19, 32, 68
Schnitzker, William Frederic, 100, 110
Schultz, Kathryn L., 17, 25, 67
Schuyler, G. Kohn, 19
Schwalm, Charlotte, 33
Schwartz, Aaron David 90, 93, 95
Schwartz, Benson Charles, 112
Schwartz, Theodore A., 19, 31, 36, 76
Scott, Earle S., 19, 26, 68
Scott, Harry Baty, 100, 110
Scott, James Zeccheus, 100
Scott, Wilbur M., 24
Seabold, William M., 15, 21, 26, 32, 39, 68, 115
Seabright, Howard Lee, 90, 93, 95
Seegar, J. King B. E., Jr., 20, 81
Seliger, R. V., 40
Semmes, John E., 9
Sendelback, Bertha, 40
Senning, Frederick Stephen, 100, 110
Serra, Lawrence M., 17, 38, 63
Settle, William B., 15, 27, 28, 58, 59, 71, 73, 74, 82
Sevcik, Charles V., 25
Sewell, James Anderson, 98, 109
Shackelford, Richard T., 14, 30, 35, 71
Shallenberger, Frank Anthony, Jr., 98, 109
Shaw, Charles Edward, Jr., 90, 93, 95
Shaw, John Hill, 100, 110
Shear, Joseph, 100, 110
Sheehan, Joseph C., 32, 33, 36
Shell, James Henry, Jr., 96, 102, 104, 107
Shell, John Robert, 112
Shelley, Harry S., 15, 22, 27, 76
Sheppard, Robert C., 20, 72
Shiling, M. S., 17, 63
Shipley, Arthur M., 10, 12, 21, 38, 40, 71, 74, 115
Shipley, Dorothy K., 20, 61
Shipley, E. Roderick, 20, 23, 24, 72
Shipley, Frank M., 23
Shochat, Albert J., 17, 25, 67
Shortle, James S., 23
Shulman, Melvin, 100, 110
Siegel, Isadore A., 14, 22, 80, 81
Silber, Earle, 100, 110
Sills, David Nicholson, Jr., 98, 109
Silverman, Benjamin K., 112
Silverstein, Daniel Lewis, 112
Silverton, George, 20, 63
Simons, George Murray, 24, 90, 93, 95
Sindler, Joseph, 32
Sirkis, Alvin Louis, 112
Siwinski, Arthur G., 15, 29, 71, 78
Siwinski, Thaddeus Charles, 112
Skinner, Richard G., Jr., 24
Skitarelic, Benedict, 17, 62, 64, 66
Smelser, Rennert Marquette, 112
Smith, Dietrich Conrad, 10, 13, 60
Smith, Edward Milton, Jr., 98, 109
Smith, Edward P., 14, 30, 32, 33, 36, 82, 115
Smith, Edward Patrick, Jr., 109
Smith, Frederick B., 14, 32, 68, 115
Smith, John Richard, Jr., 100, 110
Smith, Sol, 15, 32, 35, 63, 66
Smith, W. Conwell, 115
Smith, William H., 13, 21, 63
Snyder, Jerome, 20, 29, 83
Snyder, Samuel, 20, 26, 64
Snyder, William Allen, 112
Sokolski, Edward John, 97, 102, 104, 107
Solomon, Milton L., 58
Spear, Irving J., 10, 12, 21, 40, 69
Spelsberg, Walter Karl, 34, 90, 93, 95
Spencer, Hugh R., 10, 12, 21, 33, 40, 61, 115
Spino, Pascal Daniel, 100, 110
Sprunt, Thomas P., 10, 12, 21, 25, 31, 62
Stahl, Robert Ray, 112
Stallard, Clinton Wolfe, Jr., 98, 109
Starkey, Nell, 112

Startzman, Henry Hollingsworth, Jr., 112
Stedem, Anthony Frederick Augustine, Jr., 97, 102, 104, 107
Stedman, Anthony F. A., Jr., 35
Stein, Albert, 57
Stein, Milton, 35
Steinbach, Stanley Roy, 97, 102, 104, 107
Steinberg, Stanley Herbert, 90, 93, 95
Steinmueller, Karl J., 17, 72
Stenstrom, William Harold, 100, 110
Stewart, Charles Wilbur, Jr., 97, 102, 104, 107
Stewart, Edwin H., Jr., 23, 24
Stichel, Frederick Louis, Jr., 91, 93, 95
Stifler, William B., 39
Stiles, Cleo D., 15, 27, 76, 77
Strahan, Charles, Jr., 97, 102, 104, 107
Strauss, George A., Jr., 14, 33, 36, 82
Strahan, Charles, Jr., 35
Street, Russell Barber, Jr., 97, 102, 104, 107
Summerlin, Winston Lee, 97, 102, 104, 107
Summers, Linden Dulaney, Jr., 112
Sussman, Harold, 100, 110
Swindell, Herbert Van Arden, 98, 109
Swink, Robert Landrum, 100, 110
Swisher, Kyle Young, Jr., 112

Tanenbaum, Solomon, 20, 27, 75
Tansey, John Jerome, 97, 102, 104, 107
Tappan, Benjamin, 40
Tarr, Norman, 112
Tarun, William, 40
Taussig, Helen M., 40
Taylor, Sarah Alice, 91, 93, 95
Teitelbaum, Harry A., 17, 25, 39, 58, 69
Tenner, David, 17, 63
Theuerkauf, Frank Joseph, Jr., 112
Thomas, Clyde Dana, Jr., 112
Thompson, Lewis Bradford, 91, 93, 95
Thuss, William Getz, Jr., 112
Tinker, Francis Xavier Paul, 24, 34, 91, 93, 95
Tipton, Dorsey R., 79
Toby, Leon, 98, 109
Toms, Paul Bernhardt, 97, 102, 104, 107
Tonolla, E. H., 15, 26, 63
Touchet, Mary Louise, 97, 102, 107
Touhey, T. J., 20, 30, 72
Toulson, W. Houston, 10, 12, 22, 27, 39, 76, 77
Townshend, Wilfred H., 26
Townshend, Wilfred H., Jr., 20, 64
Traband, John H., 14, 68
Traband, Millard Tolson, Jr., 24, 91, 93, 95
Trench, James McKechan, 100, 110
Trevaskis, Allan Edward, 97, 102, 104, 107
Trimble, I. Ridgeway, 14, 30, 35, 38, 71
Triplett, W. H., 20, 63
Trout, Hugh H., Jr., 20, 72
Truitt, Ralph P., 10, 13, 21, 25, 67
Tuebner, Mrs. Raymond, 33
Tull, Myron G., 17, 70
Tumminello, S. A., 32
Tunney, Robert B., 32, 34, 36
Turner, Philip C., 9
Turner, Roy Byron, Jr., 34, 91, 93, 95
Tyler, John Edward, Jr., 100, 110

Uhlenhuth, Eduard, 10, 12, 58, 59
Ullrich, Henry F., 13, 22, 27, 39, 71, 75
Ullsperger, John Francis, 34, 91, 93, 95

Valderas, José Gervasio, 100, 110
Vanden Bosche, August Harry, 100, 110
Vaughn, James Anderson, Jr., 98, 109
Vazzana, Hugh D., 24
Venable, Sidney Johnson, Jr., 100, 110
Vennard, William O., 23
Veronica, Sister M., 30
Vincent, Sister M., 30
Vollmer, Frederick J., 64
Voshell, Allen Fiske, 10, 12, 22, 27, 39, 40, 73, 75

Wagner, John A., 15, 20, 61, 66, 78, 115
Wagner, Philip S., 17, 67
Wagner, Victor, 97, 102, 104, 107
Waknitz, Frederick W., 20, 72
Walker, W. Wallace, 15, 58, 57, 71, 73
Waller, William K., 20, 64
Walsh, Frank B., 39
Walters, Hezekiah G., Jr., 112
Waters, Virginia M., 61
Walton, Henry J., 10, 12, 22, 40
Waltz, Robert Claude, 100, 110
Ward, Grant E., 13, 22, 29, 39, 71, 78, 79
Ware, Charles Ingersoll, 112
Warfield, Clarence, 56
Waring, H. Glenn, 39
Warner, C. Gardner, 13, 33, 61, 115
Warthen, William, H. F., 14, 70
Waterman, Roger Sherman, 100, 110
Weeks, William, Earl, 20, 26, 68
Wehling, Benjamin Bird, 91, 93, 95
Weiland, Glenn S., 14, 61
Weinberg, Harold Herbert, 97, 102, 105, 107
Weintraub, Joseph, 97, 102, 105, 107
Weitzman, Elliott Lionel, 98, 109
Welch, Hugh J., 32
Wells, Benjamin Sargent, Jr., 100
Wells, Gibson J., 17, 26, 68
Wentz, Irl Jesse, 98, 109
Wheeler, Thomas Easson, 97, 102, 105, 107
White, John Phillips, III, 100, 110
White, Joseph McCurley, III, 97, 102, 105, 107
White, Mary Louise Touchet, 105
Whitehead, Hugh G., 17, 63, 66
Whitehead, Samuel Lester, 100, 110
Whitehorn, Clark Allan, 112
Whitehurst, Mrs. John L., 9
Wich, J. Carlton, 20, 23, 26, 68
Wilder, Milton J., 20, 27, 39, 40, 75
Wilfson, Daniel, Jr., 20, 64, 65
Wilkerson, Albert R., 20, 72
Wilkerson, J. Herbert, 14, 79
Wilkins, Kenneth Worth, 91, 93, 95
Wilkins, Mabel, 25
Williams, Huntington, 10, 12, 70
Williams, James Delbert, 100, 110
Williams, Johnny Elbert, 100, 110
Wilson, Benjamin James, 100, 110
Wilson, John Dean, 112
Wilson, Julia E., 42

Wilson, Mary Stuart, 91, 93, 95
Wilson, Thomas L., 23
Winokur, George, 100, 110
Winship, Emma, 25
Winslow, Oliver Parry, Jr., 97, 102, 105, 107
Winslow, Randolph, 55
Wise, Walter D., 10, 12, 30, 71
Wisness, Osmund A., 24
Wisong, Georgiana, 40
Wolfe, William D., 31, 36
Wolfe, Walter McIlhaney, Jr., 98, 109
Wolff, Thomas C., 10, 14, 32, 36, 63, 65
Wollenweber, Henry L., 17, 62
Woolley, Lawrence F., 13, 67
Womack, William Spengler, 112
Wood, Austin H., 15, 76, 115
Wooden, Allen Curtis, 91, 93, 95
Woodrum Olin Cain, 91, 93, 95
Woodward, Arthur Fletchall, 97, 102, 105, 107
Workman, Joseph Berkeley, 98, 109
Wright, Isaac Clark, 91, 93, 95
Wright, Robert B., 10, 13, 61
Wylie, H. Boyd, 10, 12, 61, 115, 116

Yaffe, Stanley Norman, 91, 93, 95
Yeager, Clark H., 15, 63, 65
Yeager, George H., 13, 25, 27, 38, 71
Young, A. D., 33
Young, Alexander William, Jr., 98, 109
Young, John Paul, 100, 110
Young, Richard Atlee, 98, 109

Zapf, Evelyn Byrd, 40
Ziegler, Paul R., 34
Zimmerman, Muriel, 40
Zinberg, Norman Earl, 97, 107
Zinn, Waitman F., 12, 30, 31, 36, 76
Zupnik, Howard L., 30, 35
Zuravin, Meyer H., 30, 35

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HISTOPLASMOSIS: A SUMMARY OF THE KNOWN FACTS ABOUT THE DISEASE*†

Report of a Case

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Approximately forty years have elapsed since Darling (5), who was searching for evidence of kala-azar in smears from the spleen, liver and bone marrow of all patients showing splenomegaly, discovered and reported the first case of histoplasmosis in man. He subsequently reported two additional instances of the disease (6, 7). After a lapse of two decades Riley and Watson (23) reported a case in 1926. In the past ten years approximately sixty-five cases have been reported. The first case seen in a child was reported in 1934 by Dodd and Tompkins (11).

Recognition of the disease is becoming more common each year. Whether the disease entity actually is occurring with greater frequency than in former years or whether more accurate methods of diagnosis are being used remains to be seen. Time will probably prove the latter assumption to be correct. Nevertheless, an adequate understanding of the symptoms gradually is becoming more necessary, especially as a differential diagnosis. A middle-aged Army physician recently succumbed to the malady. It is the purpose of the author to provide a summary of the known facts after a search of the literature. At the same time a case will be presented which demonstrates the more common aspects of histoplasmosis.

DEFINITION

Histoplasmosis, a fungus disease involving the reticulo-endothelial system, formerly was considered rare; however, it is becoming increasingly more

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* From the Department of Pathology, Baltimore City Hospitals.

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common. It is extremely protean in its manifestation, but usually is characterized by fever, splenomegaly, hypochromic anemia, leukopenia, and lymphadenopathy.

INCIDENCE

Heretofore considered to be a tropical disease, at the time of this writing histoplasmosis has been found throughout the world. Several cases have been reported recently from records which show that the disease should have been diagnosed at least fifteen years before. As yet no cases have been reported in Eskimos or in the frigid zone. Outside of these two exceptions nearly every region of the world has been a source of the disease. The incidence is higher in the white race as compared with the negro by a ratio of eight to one. In cases so far reported the male sex has been involved more than three times as often as the female. No age group is free, the oldest patient recorded being seventy-one years old and the youngest three months of age. There seems to be no occupational predilection, the disease occurring as often in the industrialist as in the farmer.

ETIOLOGY

According to Darling (5, 6, 7), the causative agent is the fungus Histoplasma capsulatum, which may exist in two forms. One is yeastlike and grows in the blood and in the reticulo-endothelial system of man. The mycelial form is found when the organism is grown outside of the body.

De Monbreun (9) in 1933 was successful in isolating both the yeastlike and mycelial forms of the organism. He found, in his original cultures on dextrose agar and Sabouraud's agar, a pure culture of a fungus which appeared as small, white, cotton-like tufts distributed over the surface. The inoculations on blood agar revealed numerous colonies, but the mycelium had no aerial hyphae. Instead of being white the fungus colony was red and almost blended with the surrounding agar. On his original cultures he could find no evidence of the yeastlike form. However, being familiar with the fact that several pathogenic fungi produce on culture media only a harmless mycelial form, he proceeded to find the yeastlike form. He subsequently found that the pathogenic yeastlike form responsible for the disease grew only on blood or serum agar at 37 C. These yeastlike organisms are oval bodies measuring about 3 μ in diameter. Surrounding each cell is a thick membrane; enclosed in this there are usually one or more fat droplets and nearly always a single protoplasmic granule. Supravital staining with methylene blue reveals that the protoplasmic granules stain intensely and each yeast cell contains one or more vacuoles which take up the stain. If cultures of the yeastlike form are allowed to lose their moisture, the mycelial form soon makes its appearance.

De Monbreun (9) injected 5 cc. of a broth suspension of a three day culture into two Rhesus monkeys. The animals died on the fourteenth day following injection. In each instance he was able to demonstrate the yeastlike organisms in the mononuclear cells of the blood three days prior to death. The organs at autopsy showed the typical changes which had been observed in human beings.

Wright and Hachtel (27) in 1941 injected the yeastlike form into a Rhesus monkey. They were able to demonstrate the presence of the organism on repeated blood cultures. However, in their experiment the animal recovered and no organism could be found at autopsy.

PATHOLOGY AND SYMPTOMS

Because histoplasmosis is a blood stream infection which affects mainly the reticulo-endothelial system of the body, one would naturally expect the symptoms to be extremely varied. A suitable classification from the more common symptoms which present themselves would fall under five headings:

1. Symptoms predominantly pulmonary in origin, characterized by cough, complaint of a cold, and occasionally associated with tuberculosis.
2. General or regional lymph node enlargement which is frequently mistaken for Hodgkin's disease, leukemia, lymphosarcoma or other lymphadenopathies.
3. Ulcerative lesions of the mucous membranes and skin.
4. Generalized systemic symptoms of fever, lassitude, hepatomegaly, splenomegaly, leukopenia, and anemia.
5. A type so protean in its manifestation that it admits of no classification, having its beginning as arthritis, sore throat, hoarseness or gastrointestinal symptoms.

The progress of these symptoms varies greatly. It is possible for the disease to run its entire course in a short time; on the other hand, the duration may be long and complicated by other concomitant diseases. Organs most frequently involved are the lymph nodes, lungs, liver, spleen, and the gastrointestinal tract. To a lesser extent the adrenal glands, bone marrow, and kidneys are the seat of typical lesions. More rarely involved are the brain, valves of the heart, middle ear, prostate and thyroid glands.

The usual gross pathologic condition formed in the lungs is that of white to yellow soft focal lesions of various sizes which resemble tubercles. The average size of the lesions is 5 to 15 mm. and surrounding each area there is a translucent fibrous ring. In many cases considerable distortion of the normal lung pattern has been noted. Some of the nodules are much larger and lie just under the pleura. In such instances there is a definite pleural reaction; frequently the adhesions are extremely dense. There is a varying amount of pneumonitis and edema usually associated with the lesions. Frequently the bronchial, tracheal and mediastinal lymph nodes are enlarged and have a reddish gray to yellow color. As a rule, the nodes are of a rubbery consistency. The small nodules found in the liver seem to be periportal in distribution. Generally there is no definite area of necrosis, but the rubbery nodules give a feeling of firmness to the organ. In at least 50 per cent of the cases reported the spleen was palpable. It is usually large and firm. On sectioning, many pale zones are found scattered throughout the organ. The sections of the tissue from autopsies show that the parasite is a round or crescent-shaped organism, 2 to 4 μ in size, surrounded by a thick refractile capsule, and contains one or more nonstaining vacuoles and one or more dark chromatin masses. Large mononuclear cells invade the tissues everywhere and contain many of the parasites and red blood cells. There is an almost complete absence of polymorphonuclear infiltration or fibrin formation. Sectioning of the liver shows destruction of the liver cells, especially at the center of the lobule. The liver sinusoids are crowded with the large phagocytic cells containing the yeastlike form of Histoplasmosis capsulatum. The lungs reveal massive infiltration of large mononuclear cells. The alveoli are collapsed in some places. In other areas the cells are packed together densely about a central area of necrosis. Surrounding this central area there are elongated monocuclear cells which present a condition, under the low power of the microscope, not unlike that of tuberculosis. However, when high power is used the difference is readily apparent. The sinusoids and tissue spaces of the spleen are packed with the characteristic cells. Changes in the lymph nodes are similar to those of the spleen.

A consideration of the clinical pathology is interesting. Those cases in which blood studies are reported present the usual symptoms of hypochromic anemia. In a few exceptions little reduction in the red blood cells has been noted. As will be seen in the case reported here, the anemia is rather severe. The white count varies considerably. The usual condition, however, is that of moderate leukopenia. A definite commitment as to the differential count is not possible at this time because the reports vary too much. In several of these cases it is necessary to bear in mind that intercurrent diseases, such as tuberculosis, leukemia, diabetes mellitus, cirrhosis and carcinoma were present. A study of the urine is of no diagnostic importance because the results reported have been variable. In this case a total serum protein value of 5.8 mg. % was recorded, with an albumin-globulin ratio of 1.8/4.0. In the small number of reported cases in which these have been recorded, the figures given are practically identical. There is a normal or slightly lowered blood protein level, with a reversal of the albumin-globulin ratio.

DIAGNOSIS

Perhaps the quickest and easiest means of diagnosis is a careful examination of a blood smear. However, in only four of the cases reported was the disease recognized by this method. It follows, therefore, that the most accurate diagnosis is made by obtaining a culture and identifying the organism. In about 50 per cent of the attempts a correct diagnosis has been made by examination of the sternal marrow. The most successful method used in the cases reported heretofore has been biopsy of the bone marrow or lymph node. Van Pernis, Benson, and Hallinger (25) recorded one instance of diagnosis by a cutaneous test. The inoculation of animals has been reported favorably and adversely; however, the amount of study done in this direction is insufficient to warrant a definite statement as to its value.

TREATMENT

During the last decade several forms of treatment have been applied. Generally speaking, it is safe to say that their value has been questionable. In nearly every case the disease terminated fatally. Parsons and Zarafonetis (20) have reported some success with neostam, which is stibamine glucoside. The use of antimony compounds seems to have no effect. Potassium, iodide, arsenicals, sulfates, ionized heavy metals, sulfonamides, and various other agents have not produced noteworthy results. About the only measures that can be maintained are supportive treatment with blood transfusions, fluids, and empirical drugs which may alleviate individual symptoms. The prognosis is almost universally fatal, although some spontaneous cures have been reported.

Following is a case report of the pulmonary type of the disease, with a complete report of the autopsy findings.

CASE REPORT

Case No. 60,383, Autopsy No. 9769: A 20 year old colored male was admitted to the Baltimore City Hospitals with the complaint of a cold of six weeks' duration.

The family history was noncontributory. The patient had measles during childhood. At the age of seventeen he had pain and swelling of the left ankle following urethral discharge. This subsided after treatment with proprietary drugs and the discharge disappeared in six days. The present illness began six weeks before admission with a sensation of tightness and constriction beneath the breast bones. Five weeks before admission swelling of the ankles appeared, the patient became short of breath, and coughed frequently. The cough was productive of small amounts of white sputum. Four weeks before admission he began to have shaking chills, fever, and night sweats, with nocturia two or three times each night. For three weeks before admission he noticed insomnia, nervousness, and two small nasal hemorrhages. There was blood streaking in the sputum for two weeks before entry. He also noted that his abdomen had become somewhat larger. From the onset of his illness until he entered the hospital he lost eighteen pounds.

A physical examination showed the patient to be a well developed young colored man lying quietly in bed and appearing acutely ill. There was evidence of weight loss. His temperature was 104.8 F., the pulse rate was 140, and respirations were 32 per minute. The blood pressure was 140 mm. of mercury systolic and 76 mm. diastolic. The mucous membranes were pale. His skin was smooth and hot; no eruptions or petechiae were seen. The anterior cervical nodes on the right measured approximately 2 cm. and were not tender. The conjunctiva was rather pale. The tongue was slightly coated and the pharynx was clear. The chest was symmetrical, expansion being good and equal. The percussion note was resonant throughout. Breath sounds were vesicular, with no adventitious sounds. The bases descended well. The precordial impulse was rather diffuse. The first mitral sound was loud and snappy, followed by a blowing systolic murmur over the precordium. The pulmonic second sound was increased and greater than the aortic second sound. The pulse rate was of good volume. The abdomen was distended, somewhat tense and tympanitic. The tip of the spleen could be felt on deep inspiration and was moderately firm. No shifting dulness and no fluid wave were elicited in the abdomen. There was moderate diffuse tenderness on palpation of the abdomen. Results of the rectal and neurologic examinations proved negative.

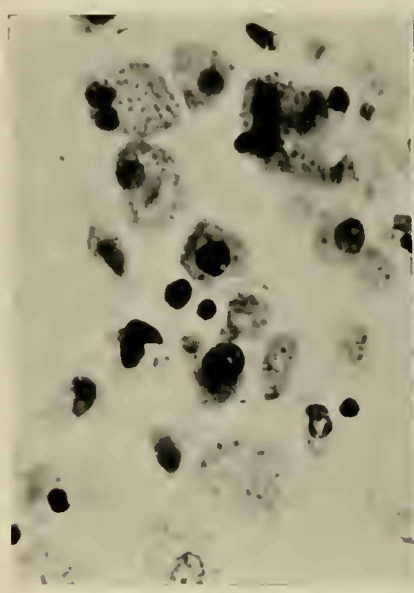

FIG. 1

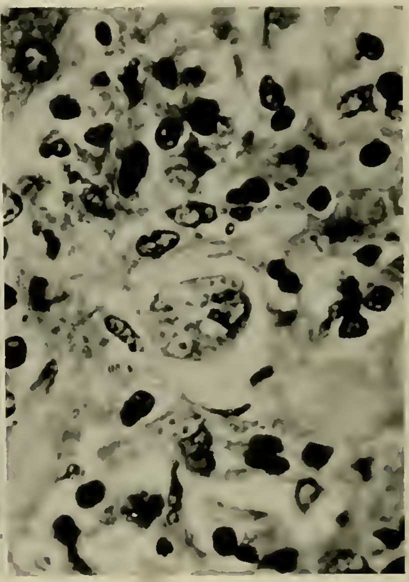

FIG. 2

FIG. 1. Section showing several large mononuclear cells packed with the yeastlike form of the organism. High dry power.

FIG. 2. A large mononuclear cell in a sinus of the liver containing several of the yeastlike forms. Oil immersion. (Courtesy of Wright, R. B. and Hachtel, F. W.)

Laboratory findings: Urinalysis revealed 4 to 5 white blood cells, 1 to 3 red blood cells, and 2 to 5 granular casts. Examination of the blood showed red blood cells 2,200,000; white blood cells 3600; hemoglobin 33%; nonsegmented forms 32%; segmented forms 32%; lymphocytes 32%; monocytes 4%. The white blood cells dropped as low as 1400, and the red blood cells ranged between 1,600,000 and 2,200,000; the hemoglobin fell to a minimum of 32%.

Cultures of the ear and stool were negative. Reaction in the gonococcus complement fixation was negative. Total blood plasma proteins were 5.8 mg. %. The albumin-globulin ratio was 1.8/4.0. Agglutinations for tularemia, typhoid, paratyphoid A and B, brucella, and proteus X 19 were negative; the agglutinations for S. suipestifer were positive on two occasions in a dilution of 1:160. Repeated blood cultures were negative. The icteric index was 5. The result of the van den Bergh test showed 2 mg. % indirect reaction. Repeated sputum concentrations were negative for acid fast bacillus.

Roentgen ray examination: A roentgenogram taken on admission showed the chest, heart, and aorta to be normal, with increased hilar shadows and nontuberculous infiltration of the base of the left lung. A roentgenographic study made two weeks later showed an area of infiltration in the right infraclavicular area. A similar study made five weeks after admission showed no change from the previous examination.

An electrocardiogram revealed sinus tachycardia and myocardial disease.

Hospital course: Throughout the period of hospitalization the patient's temperature ranged from 101 to 104.5 F. Because of the respiratory difficulty shown at the time of admission digitalis was administered but there was no improvement. The spleen and liver became more easily palpable. Two weeks after admission a blood transfusion of 500 cc. was given, to which there was no reaction. Although the hemoglobin was increased there was no improvement in his condition. Sulfathiazole therapy was started at the same time and continued for seven days without any appreciable results. The patient became weaker and his course was definitely downhill. Five weeks after being admitted to the hospital he signed his release and went home. Two weeks later he expired and the body was brought to the hospital for autopsy.

Autopsy findings: The external appearance was that of a rather emaciated colored male, 20 years of age, measuring 183 cm. in length. The skin of the inner surface of the right thigh was dark, rather rough, and appeared thickened. To the left of the midline of the abdomen was a small ruptured pustule. The pupils were round, regular, and equal, each being 7 mm. in diameter. The scleras were clear and the conjunctiva was pale. The right external auditory canal was filled with fresh necrotic blood. The gums were dirty but the teeth seemed to be in good condition. The neck, thorax, abdomen, genitalia, and extremities were normal. There was no enlargement of the superficial lymph nodes.

Upon internal examination the surfaces of the pericardial cavity appeared smooth and shiny. There was about 10 cc. of clear, straw-colored fluid. No thrombus was seen in the main pulmonary artery. The pleural surfaces of the thoracic cavity were glistening; there was no fluid or adhesion in either pleural cavity. The organs in the abdominal cavity were normal in position and relationship. The liver and spleen were enlarged. Approximately 500 cc. of pale amber fluid was found in the peritoneal cavity. No adhesions were seen. The abdominal lymph nodes were enlarged, especially those about the head of the pancreas and pylorus. On sectioning, these glands were for the most part whitish, but pinkish areas and some yellowish flecks were also noticed. The glands were firm and rubbery. They surrounded the common bile duct but did not compress it, and extended along the entire length of the pancreas to the hilar region of the spleen. The nodes of the mesentery also were enlarged. The glands about the abdominal aorta were enlarged, as were those around the common iliac arteries. Some of them measured 3 to 4 cm. in length and about 1 to 1.5 cm. in diameter. The enlarged spleen and lymph nodes were the most outstanding pathologic findings in the abdomen.

The heart was small and weighed 290 grams. The epicardium was smooth and glistening and contained a normal amount of fat. The myocardium was bright red and showed no scars or thrombus. The valves and coronary arteries were thin and delicate. There was no narrowing of the coronary orifices. The aorta was small and elastic. The great vessels arose normally; the renal arteries were not narrowed.

The pleural surfaces of the lungs were smooth, glistening, and of a pale bluish gray color. In the lower lobe of the left lung was a wedge-shaped area of consolidation extending from the hilar region, which on sectioning was found to be dark gray and pasty in appearance, with a foul odor emanating therefrom. There were two or three small areas which suggested cavity formation; just beneath the pleural surface was a cavity measuring 3 cm. in diameter. In the rest of this lobe were patches of red rubbery tissue indicating lobular pneumonia. Similar patches were seen throughout the lobes of the right lung, especially in the lower lobe along the posterior border. Some emphysema was present in the upper lobe. Except for the areas of pneumonia the parenchyma was pale gray. The bronchi were filled with a foamy exudate and there may have been some edema of the lung. The peribronchial and peritracheal lymph nodes were enlarged and anthracotic; some of them contained grayish areas resembling the nodes seen in the abdomen. Throughout the lungs were scattered small fibrous nodules measuring from 5 to 15 mm. in diameter; these were infrequent in the left lung; only two or three large nodules were noted in both lungs.

The liver was large and pale and weighed 2080 grams. On sectioning, the parenchyma was found to be mottled. The central areas were white and irregular. There was considerable whiteness of the center in some areas and this tissue appeared rather dense. The walls of the gallbladder were thin and contained about 50 cc. of thin dark bile. The bile ducts were normal; there were no calculi.

The spleen weighed 610 grams. The capsule was thin and smooth. On sectioning, the pulp bulged from beneath the capsule and was dark red and soft. The malpighian bodies were not seen. There were some large pale areas in the pulp which were softer than the surrounding red pulp. Numerous white patches resembling infarcts were noted, especially beneath the capsule. These measured up to 2.5 cm. in diameter. One of the white areas was surrounded by a thick border of firm red pulp.

The pancreas weighed 330 grams, with the duodenum and enlarged glands attached. This organ was well developed, firm, normal in position and shape, with distinct lobulations. The duct of Wirsung was patent.

The adrenal glands weighed 8 grams each. They were normal in size, shape, and position. The cortices were pale and pinkish. There was little medulla present in either gland but that found was normal.

There were numerous dirty superficial ulcers in the esophagus and these extended 6 cm. above the cardia of the stomach. The mucosa of the stomach was well preserved; the mucous membrane of the jejunum was pale. In the mucosa of the ileum and colon were numerous pinkish areas resembling hemorrhages. Tiny ulcers were sparsely scattered throughout the lower ileum and colon. There was no scarring of the appendix. The rectum appeared normal.

The kidneys were large, the right one weighing 255 grams and the left 240 grams. The capsules stripped easily and revealed smooth surfaces. There was a suggestion of capillary hemorrhages on the surfaces. On sectioning, the kidneys were rather pale. The cortices were thick and the striae apparently normal. Small areas of hemorrhage appeared throughout the cortex. The calices, pelves, and ureters appeared normal. In the region of the trigone the mucosa of the bladder was thick and white; the remainder of the mucosa was slightly injected. The testes were small; the prostate gland and seminal vesicles appeared normal.

The appearance of the tongue was normal. The left tonsil was small and scarred; the right one was not obtained. The pharynx was normal. The mucosa was ulcerated and entirely gone from the tip of the epiglottis and revealed the cartilage. There were other small ulcers of the aryepiglottic folds and inner surface of the larynx. One small ulcer was seen on the right at the junction of the true and false cords posteriorly. The thyroid gland appeared normal and was well filled with colloid. Two parathyroid glands were found.

The framework of the body was covered with a thin layer of pale subcutaneous fat. The muscles were bright red and apparently well developed. The femur marrow was pinkish and fatty; the vertebral marrow was red.

The meninges were thin and delicate. No thrombus was seen in the dural sinuses. The vessels at the base of the brain were thin and delicate; the hypophysis was large and firm; the pineal body appeared normal. Coronal sections of the brain revealed no evidence of any unusual changes.

Histopathology: There was hemorrhage into some alveoli of the lungs; others were packed with large collections of mononuclear cells. Throughout the section there were some caseous lesions which under lower power magnification resembled tuberculosis. In these necrotic areas the alveolar septums could not be defined. Surrounding the lesions were large mononuclear macrophages. In some places there were definite epithelioid cells. The large mononuclear cells contained small round bodies, which were somewhat darker than the cytoplasm of the cells and were the typical yeastlike form of the fungus. Some of the fungi were free between the cells. The alveoli elsewhere showed collections of mononuclear cells arranged in such a manner that they resembled tubercles. There were lymphocytes around the bronchi and some of the large blood vessels. Extensive lobular pneumonia with associated edema was noted.

The mucosa and part of the submucosa of the trachea were ulcerated. The submucosal glands were filled with numerous lymphocytes and large macrophages. Large numbers of fungi were seen in the mononuclear cells.

The portal areas of the liver were crowded with mononuclear cells containing the parasites. A few fungi could be found in the cells away from the portal area, but the liver cells were atrophic.

The sinuses of the spleen were packed with macrophages containing numerous parasites. There were some caseous areas which had a number of free parasites.

There was a subacute or chronic interstitial infiltration of lymphocytes and plasma cells in the kidneys but no evidence of the lesions of histoplasmosis.

In the prostate gland there were several lesions in which the mononuclear cells were arranged so that large macrophages were in the center, and round and plasma cells surrounded the periphery.

The sinusoids of the lymph nodes were packed with large macrophages that contained parasites. These macrophages also contained many red blood cells.

On sectioning, the pylorus, ileum, and colon showed ulcers beneath the submucosa. These ulcerated areas were heavily infiltrated with round cells, plasma cells, and macrophages. Nearly all of the macrophages contained the typical yeastlike form of parasites.

In one area of the skin there was an infiltration showing the typical macrophages.

The bone marrow of the vertebrae and femurs appeared gelatinous and contained scattered collections of macrophages filled with fungi.

Summary of distribution of lesions: Lesions were found in the lungs, trachea, liver, spleen, prostate gland, ileum, colon, pylorus, skin, vertebral and femoral marrow, mesenteric, retroperitoneal, peribronchial, and peritracheal lymph nodes.

SUMMARY

1. A brief review of the literature on histoplasmosis in man is presented.
2. Special references to general characteristics of the disease are noted.

3. The fact that cases of histoplasmosis have been reported in journals of bacteriology, clinical investigation, dermatology, orthopedic surgery, otolaryngology, pediatrics, general medicine, pathology, syphilis and tropical medicine reveals the protean nature of the disease and its wide dissemination in the body.

4. A case is reported in which a complete autopsy was performed.

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PULMONARY MANIFESTATIONS OF BRUCELLOSIS*†

Report of a Case

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In recent years brucellosis has attracted much attention as a health problem and a greater realization of its varied nature and protean manifestations has developed. Although it usually is considered as an arthritis with undulating fever, cases of pulmonary brucellosis are being reported in the more recent literature.

As additional case reports appear it becomes apparent that brucellosis must be considered in the differential diagnosis of diseases involving the lung. Brucellosis is known to cause pneumonitis, bronchitis, lung abscess, and pulmonary embolism. Pulmonary congestion and bronchial pneumonia are frequent complications of brucellosis. Pneumonia, primary atypical pneumonia, tuberculosis, and Löffler's syndrome have been confused with pulmonary manifestations of this disease. The case reported here is one in which brucellosis was confused with bronchogenic carcinoma.

CASE REPORT

The patient, a 61 year old colored farmer, was admitted to the University Hospital on December 18, 1944 with the complaint of weakness, loss of appetite and weight, and cough since September, 1944. The past and family histories were not significant. The patient had been in good health until August, 1944 when he had "grippe." This cleared up in three weeks under treatment by his family physician. In September he suffered a second attack and again was given symptomatic treatment. The malaise, anorexia, weakness, muscular and joint aches and pains of this attack were similar to those of the previous one, but there was a cough productive of whitish mucus in addition. The symptoms persisted and the patient began to lose weight. On November 20, 1944 he was admitted with these complaints to a hospital in Washington, D. C. There bronchoscopic examinations were made and he was found to have a tumor of the right middle bronchus which, it was felt, caused partial atelectasis with infection of the middle lobe of the right lung. Severe secondary anemia also was found. A biopsy of the tumor showed no evidence of malignancy but it was reported that the biopsy procedure was extremely difficult. The patient received blood transfusions, and a thoracotomy with pneumonectomy or lobectomy was recommended. Because the patient was a resident of Maryland he was transferred to the University Hospital.

A physical examination on admission here revealed evidence of a weight loss of about 25 pounds and anemia. The trachea was deviated to the right. There was a slight respiratory lag of the right side of the chest. The percussion note was impaired in the right axilla and from the fifth rib to the base posteriorly. The breath sounds were dimin-

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ished over this area. No râles were heard. Except for these findings the physical examination was negative. The patient's temperature occasionally rose to 100 F.

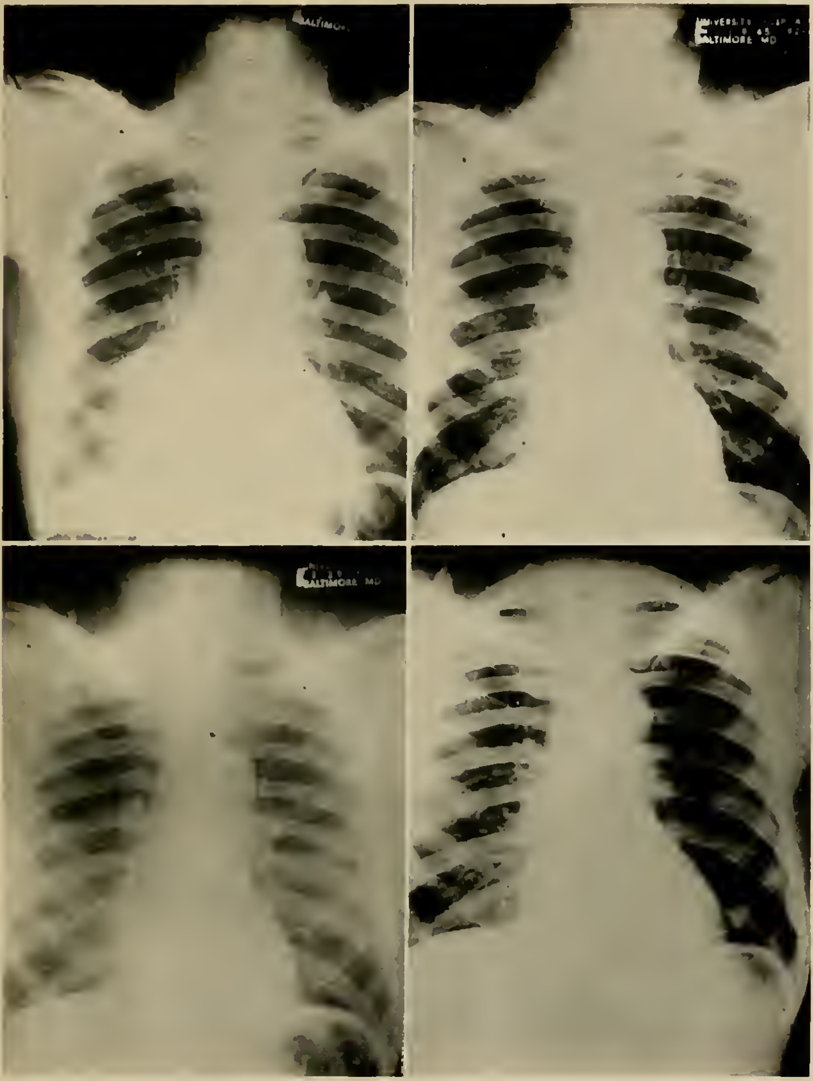

FIG. 1. Roentgenograms of the chest showing gradual resolution of the pneumonic lesion. A (upper left), December 19, 1944. B (upper right), January 8, 1945 C (lower left), January 29, 1945. D (lower right), May 4, 1945. (Courtesy Maryland State Department of Health.)

Routine laboratory examination of the blood revealed hemoglobin of 11.5 gms. or 80%. The white cell count and differential count were within normal limits. The serologic test for syphilis was negative. Repeated blood cultures and sputum examinations for tubercle bacilli proved negative.

A roentgenogram of the chest showed an area of moderately dense infiltration adjacent to the lower one-third of the right border of the heart and located in the posterior aspect of the lower lobe of the right lung. There was slight pleural thickening in the interlobar fissure of the right lung. This was interpreted as: (1) an inflammatory lesion of the lower lobe of the right lung, (2) atelectasis, or (3) bronchogenic carcinoma. A bronchoscopic examination was suggested and this revealed a chronic inflammatory lesion on the mucosa of the right middle bronchus. Biopsy confirmed this impression.

The result of a tuberculin test made with 0.1 cc. of 1:1000 old tuberculin was negative. Fungi could not be grown from the sputum. A primary focus for a possible metastatic lesion, neoplastic or inflammatory, or evidence of metastasis elsewhere than the lung could not be found.

However, the results of repeated agglutination tests for Brucella abortus, suis and melitensis were positive. The titers of the various tests are shown in the accompanying chart. It will be noted that there is a slight but definite rise in strength up to January 15, 1945 and then a gradual decline. The brucellergin test of 0.1 cc. of 1:12000 brucellergin administered subcutaneously on January 17, 1945 gave a 3 plus reaction.

DATE	TITER							
	20	40	80	160	320	640	1280	Control
1/4/45	3+	2+	1+	0	0	0	0	0
1/5/45	4+	3+	2+	1+	0	0	0	0
1/11/45	4+	4+	3+	2+	1+	0	0	0
1/15/45	4+	4+	4+	3+	2+	1+	0	0
1/17/45	4+	4+	3+	1+	0	0	0	0
1/20/45	4+	4+	3+	2+	1+	0	0	0
1/22/45	4+	4+	3+	2+	1+	0	0	0
5/4/45	4+	4+	4+	3+	2+	1+	0	0
5/4/45				+*				

Fig. 2. Agglutination Tests for Brucella

* This test was done by Maryland State Department of Health.

The patient's course in the hospital was one of gradual improvement. The evening temperatures frequently ranged from 99.6 to 100 F. but these subsided. Repeated roentgen ray examinations showed gradual resolution of the pulmonary lesion. His cough disappeared entirely and the malaise, weakness, and anorexia improved to a great extent. Upon discharge he had begun to gain weight.

Five months later the patient was reported to be in apparent good health. The results of the agglutination tests were positive up to 1:160 dilution. A roentgenogram of his chest showed almost complete resolution of the inflammatory process.

COMMENT

It was felt that the findings in the routine workup of this patient did not justify a diagnosis of bronchogenic carcinoma and further studies were made. The high titer, and its increase, of the agglutinations and the positive brucellergin test made brucellosis a definite possibility. Facilities for blood cultures with repeated transfer to fresh media and for an opsono-cytophagic index were not available as means for proving the diagnosis. However, the State Health Department conducted an investigation to determine a possible source of infection. Thirteen of the herd of cattle on the patient's farm tested positive for Bang's disease. It is felt that this fact and the patient's recovery without operation or irradiation support the diagnosis of pulmonary brucellosis.

SUMMARY

A case of pulmonary brucellosis is reported.

Brucellosis must be considered in pathologic changes of the lungs where the etiology is not clear.

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A CASE OF METASTATIC CARCINOMA SIMULATING THE GUILLAIN-BARRÉ SYNDROME*†

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In an article discussing the terminology of the Guillain-Barré syndrome, Lewey (13) aptly conveys the impression that there is a tendency today to bring together a heterogeneous group of polyneuropathies under one rather noninformative title. However, he concludes his paper by suggesting that the popular designation be maintained as a general heading for the various forms of polyneuropathy and radiculopathy of unknown etiology in which a characteristic albuminocytologic dissociation is noted in the spinal fluid.

The essentials of the Guillain-Barré syndrome are: a widespread flaccid paralysis frequently following an infection of the upper respiratory tract; loss of the tendon reflexes; paresthesias and pain; a tendency toward involvement of the cranial nerves; and, most specifically, a definite increase of the protein content in the cerebrospinal fluid with little or no cellular increase. Roseman and Aring (19) reported two cases in which there was noted an optic neuritis. The chief pathologic abnormality is degeneration of the peripheral nerves and the roots, sometimes with cellular infiltration and congestion of the nerves and often of the spinal cord.

There are in the medical literature over 150 cases of various neuropathies closely resembling those described by Guillain, Barré, and Strohl (8) but given many different titles. Some of the synonyms are as follows:

	CASES REPORTED	AUTHORS QUOTED
Acute febrile polyneuritis	12	1
Acute infectious polyneuritis	40	4
Infective neuronitis	40	3
Myeloradiculitis	7	1
Acute infective meningomyeloneuritis	3	1
Polyradiculoneuritis	17	3
Meningoradiculoneuritis	3	1
Myeloradiculoneuritis	7	1
Acute polyneuritis with facial diplegia	38	4
Acute encephalomyeloradiculoneuritis	3	1

CASE REPORT

The patient, a 40 year old housewife, was admitted to the hospital on a stretcher, with the chief complaint of "I can't walk and I have trouble with my eyes." Her illness began

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* From the Department of Medicine, Mercy Hospital.

† Received for publication July 7, 1945.

on May 29, 1944 following an attack of grippe, when she began to notice weakness, numbness, and tingling in the legs. Burning pains radiated along the posterior aspect of each leg and suggested sciatic distribution. She was treated for neuritis by the family physician but failed to improve. By July she was unable to get about, even with the aid of a cane.

A review of the systems revealed no chest pain, cough or dyspnea. Her appetite was good; she suffered from constipation but had no abnormal stools. There was a burning sensation on urination and the patient voided involuntarily if she coughed forcefully. She could void voluntarily only in a standing position. Two weeks prior to admission she began to suffer from headaches, which were not severe and responded to aspirin. There had been no convulsions. In June the upper lid of the right eye began to droop and gradually closed entirely. The family history was noncontributory. There were no previous serious illnesses. The patient had three children who were living and well.

Physical examination revealed a well nourished white female in no apparent distress. There was complete ptosis of the upper lid of the right eye. This eye was deviated to the temporal side and could not be rotated toward the nose or upward. The pupil of the right eye was dilated and fixed; the outline of the nerve head was obliterated by edema; the cup was small and almost obscured by the swelling of the disk. There was an elevation of the right nerve head equivalent to three diopters. Numerous small white exudates radiated from the disk. No peripheral lesions were present; the veins were full.

The left eye was externally negative, the pupil being round, regular, and even, and reacting to light. The fundus was normal. The vision was poor in the left eye but better in the right when the lid was held open. The condition of the nerve head on the right was compatible with increased intracranial pressure or optic neuritis. Other cranial nerves besides the second, third, fourth, and sixth were normal.

The mouth and nose were negative. There was no rigidity, vascular distention or adenopathy in the neck. The thyroid gland was not enlarged. The lungs were clear to percussion and auscultation. Heart rate and rhythm were normal, the sounds were clear, and no murmurs were heard. The blood pressure was 120 mm. of mercury systolic and 80 mm. diastolic. The abdomen was negative except for tenderness over the bladder. There was weakness of the muscle power of both lower extremities, more noticeable on the right. Knee kicks and ankle jerks were absent in both legs. Neither clonus nor Babinski's sign was present. There was complete loss of vibratory sense in both lower extremities, and paresthesias were seen in both; edema was not noticed in the extremities. The abdominal and epigastric reflexes were absent bilaterally. A pelvic examination revealed an approximately normal multiparous genital tract, with no gross evidence of malignant disease.

The findings of a neurosurgical consultant suggested that the patient's symptoms could be attributed to multiple metastatic lesions from an undetermined primary site.

Laboratory findings: The initial urinalysis by means of a catheter revealed 3 to 5 white blood cells and 1 or 2 red blood cells in each high power field. In later specimens the white blood cells were abundant; the albumin and sugar were negative. Examination of the blood showed hemoglobin 80%; red blood cells 3,910,000; white blood cells 6800; a normal differential. The sedimentation rate was 10 mm. (corrected) in one hour. The blood sugar level was 92 mg.%, urea nitrogen 28 mg.%. Results of the serologic test for syphilis were negative.

Spinal punctures: September 18, 1944: pressure 110 mm. water, results of the Kahn test were negative; 4 plus globulins; sugar 41 mg.; 45 cells; lymphocytes 100%; total proteins 171 mg.%. October 5, 1944: pressure 110 mm. water, Kahn test again was negative; 4 plus globulins; 31 cells; lymphocytes 64%; polymorphonuclears 36%.

Roentgen ray studies: A stereogram of the skull on September 9, 1944 revealed no bone destruction, no new bone formation, and no evidence of tumor. A roentgenogram of the thorax taken on September 12, 1944 showed the heart and great vessels to be of normal size and position. There was peribronchial thickening along the lower bronchial tree; except for this the lungs were negative.

Course in hospital: Despite the impression of the neurosurgeon the recognized treatment for infectious polyneuritis was instituted. The weakened muscles were massaged daily. The patient was given vitamin therapy in the form of injections of thiamine hydrochloride and B complex. Neostigmine in therapeutic doses did not modify the muscle weakness. A retention catheter was inserted because of the difficulty of voiding. The headache was not a constant feature of the illness, although there were occasions when she complained bitterly of this and codeine was administered. Pain in the back and legs was more frequent than the headache. There was no return of muscle power to the lower extremities and the patient gradually lost appetite and weight. She continued progressively downhill and developed signs of patchy consolidation in the lungs associated with cough and pain. Sulfonamides were administered when her temperature rose and she seemed to respond fairly well. However, the pain and cough continued. Terminally she began to expectorate bloody purulent sputum and her temperature rose in spite of medication. Respirations ceased on the one hundred and thirty-second hospital day.

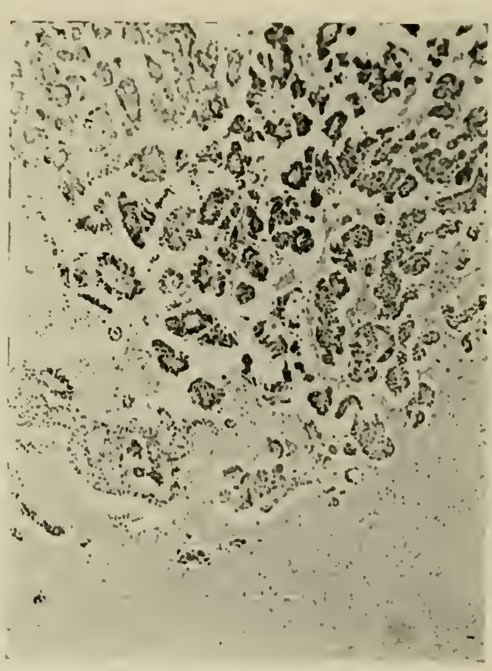

FIG. 1. Section showing the structure of a metastatic nodule.

Pathologic findings (by Drs. J. R. Davis and Ira S. Ross): The body was that of an early middle-aged white female and exhibited much malnutrition and cachexia. The brain was removed in the routine manner and a yellowish coagulum was found to be distributed over both hemispheres. There were areas of necrosis over the left occipital and both temporal regions. The left optic nerve was atrophied just distal to the chiasm. The pituitary gland was removed and appeared to be necrotic. The pupil of the right eye was dilated and there was external strabismus on the right. Upon exploring the thoracic cavity a large abscess was found anteriorly in the upper lobe of the right lung. There was a smaller abscess measuring 2½ cm. in diameter in the lower border of this lung. On sectioning, the right lung, weighing 750 grams, was found to contain multiple nodules surrounded by areas of consolidation. The left lung weighed 350 grams and contained several glands approximately 2 cm. in diameter around its hilar region. The heart weighed 230 grams and was negative except for a plaque measuring 2 cm. in diameter just below the aortic valve. The liver weighed 1250 grams and was studded with numerous grayish white nodules varying in size from ½ to 2½ cm. in diameter. The gallbladder was entirely normal. The right kidney weighed 100 grams and there was a small nodule at the lower pole which resembled those found in the liver. The left kidney was normal, as were the spleen and pancreas. No abnormalities were found in the uterus, the ovaries and the ovarian tubes. The gastric, duodenal, and intestinal mucosa was intact throughout, and the mesentery appeared normal. Retroperitoneal glandular metastases were noted along the vertebral column.

An examination of the brain was made by the neuropathologist. In stripping up the dura and the falx a nodule of tissue measuring 2.5 by 2.5 by 2.5 cm. was evulsed from the midline of the cerebellum adherent to the under surface of the tentorium at the junction of the superior and straight sinuses. This nodule was firm, rubbery in the center, with a friable margin. There was a moderate cerebellar pressure cone extending 1 cm. from the base of the cerebellum. Sectioning through the brain revealed numerous, scattered, well demarcated tumor masses, all translucent, soft, and having the appearance of paraffin. The cord was not removed.

Gross anatomic diagnosis: Metastatic carcinoma of the lungs, brain, liver, and kidneys, with necrosis and abscess formation in the right lung; optic atrophy.

Microscopic examination: The cerebral meninges were delicate and showed no accumulation of cells. The cortical structure was not disturbed. Fairly deep in the underlying white matter a well demarcated area of necrosis, not encapsulated, was permeated with columnar and cuboidal epithelial tumor cells. These contained large oval and round vesicular nuclei with a number of small clumps of chromatin. Many of the nuclei showed mitotic figures. The cells contained abundant cytoplasm, but particularly away from the blood vessels they existed as syncytia rather than as discrete cells. Around the blood vessels the cells were arranged in collars of columnar epithelium. No exudative or glial reaction was found at the margins of the area of tumor invasion. Sheets of tumor cells were seen side by side with normal-appearing cerebral tissue. Masson's stain showed no connective tissue proliferation in or about the area of tumor invasion.

Sectioning of other organs revealed only the metastatic adenocarcinoma nodules without any pathologic change in the uninvaded tissues. The detail of the tumor cells presented essentially the same structure in all areas. The cellular structure gave no positive evidence as to the site of the original neoplasm.

Microscopic diagnosis: Metastatic carcinoma, multiple, of the brain, liver, kidney, and lungs, with necrosis and abscess formation in the right lung.

DISCUSSION

An interesting feature of the case was the speculative possibility as to the primary site of the tumor. It is a recognized fact that at times a routine postmortem examination fails to localize the initial malignant focus. Here the bronchi were explored carefully but there was no evidence to support a bronchogenic origin. Intact mucosa was found throughout the intestinal tract. The breasts were entirely normal and the genito-urinary tract was negative.

SUMMARY

Although the exact diagnosis of the case is still somewhat uncertain, postmortem examination did reveal enough information to place it among the neoplastic diseases. It is worthy of note that the clinical picture resembled so closely the Guillain-Barré syndrome. Certainly the eye lesions and headaches can be explained on the basis of the extensive intracranial metastasis. The neurologic disturbances in the lower extremities and bladder were undoubtedly caused by encroachment of the metastases along the vertebral column on the nerve roots and cord. A partial block in the spinal canal accounts for the increase in spinal fluid protein without a concomitant increase in cells.

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ANNUAL REPORT OF THE DEPARTMENT OF OBSTETRICS, SCHOOL OF MEDICINE, UNIVERSITY OF MARYLAND FOR 1944*†

FOREWORD

It is difficult to express properly my deep and sincere thanks to all members of the Department of Obstetrics for the cheerfulness and willingness with which they have assumed the extra burdens thrust upon them, for the spirit of cooperation they have shown, and for the immense amount of work they have done. This report is a tribute to them and is offered as such.

For the fourth year the number of patients cared for by a greatly depleted staff has remained high. During this year the number of nurses has been still further reduced by the needs of the Armed Forces, but essential care to the patient has suffered little. Those remaining have proved extremely loyal and have done a maximum of work with a minimum of complaint.

The number of home deliveries has shown a considerable decrease possibly because of the improved economic status of the clinic population, and there has been a corresponding increase in hospital deliveries. The maternal mortality remained about the same, with a rate of 2.4 per 1000 live births. It is of more than passing interest that all of these deaths occurred in patients registered in the clinic and that one-half of the total number were caused by eclampsia. It is believed here that eclampsia is an avoidable condition and therefore these three deaths must be adjudged preventable.

Appended is a table covering deaths of mothers for the past seven years.

Louis H. Douglass, M.D.
Professor of Obstetrics

Number of patients delivered and discharged (twins 31 sets) not including abortions		2960
White	1519—51.42%	
Colored	1441—48.58%	
In homes (twins 4 sets)		820—27.5%
White	76	
Colored	744	
Registered		712
Unregistered		108
In hospital (twins 27 sets)		2140—72.5%
White	1443	
Colored	697	
Number of deliveries (twins 2 sets—delivered by section)		2989
White	1532	
Colored	1457	

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* From the Department of Obstetrics, School of Medicine, University of Maryland.

† Received for publication August 8, 1945.

Normal	1407—47.07%
White	346
Colored	1061
Operative deliveries (all in hospital)	1582—52.93%
Forceps deliveries	1425—47.67%
White	1085
Colored	340
High	0
Mid	5
Presentation, occiput posterior	1
Delivered as such	1
Presentation, occiput transverse	2
Forceps rotation	2
Manual rotation	0
Dystocia, cervical	1
Inertia, uterine	1
Low	1420
Control	1115
Presentation, occiput posterior	100
Delivered as such	51
Delivered following rotation	49
Spontaneous rotation	1
Manual rotation	18
Forceps rotation	30
Presentation, occiput transverse	204
Spontaneous rotation	4
Manual rotation	78
Forceps rotation	120
As such	2
Presentation, face	1
Breech extraction	75—2.51%
White	47
Colored	28
Internal podalic version and breech extraction	8—0.26%
White	7
Colored	1
Presentation, transverse	4
Second twin	4
Cesarean section	70—2.34%
White	47
Colored	23
Classical	25
Section, previous	6
Disproportion, cephalopelvic	1
Cervix, high amputation of	1
Preeclampsia	6
Hypertensive cardiovascular disease	2
Placenta previa centralis	2
Placenta previa partialis	2
Placenta, premature separation of complete	4

Rectum, stricture of, lymphogranuloma inguinale	1
Laparotrachelotomy	43
Disproportion, cephalopelvic	19
Pelvis, contraction of	4
Placenta previa marginalis	3
Placenta previa partialis	1
Preeclampsia	7
Placenta, premature separation of	4
Hypertensive disease	2
Pelvis, extensive scar tissue formation of, caused by repeated previous surgery	1
Section, previous, with placenta under scar (with prolapsed cord)	1
Presentation, transverse	1
Extraperitoneal	0
Porro	1
Fibroids, uterine, with cephalopelvic disproportion	1
Post mortem	1
Rheumatic heart disease with sudden death	1
Laparotomy	2—0.07%
White	0
Colored	2
Hysterorrhaphy	1
Pregnancy, abdominal	1
Craniotomy	1—0.03%
White	0
Colored	1
Hydrocephalus, presentation breech	1
Decapitation (dystocia, shoulder presentation, dead fetus)	1—0.03%
Abortions	104
Spontaneous	99
In homes	33
Registered	12
Syphilis, maternal	4
Cause undetermined	8
Unregistered	21
Syphilis, maternal	2
Cause undetermined	19
In hospital	66
Cause undetermined	59
Hypertensive disease	1
Syphilis, maternal	4
Hypothyroid disease	1
Undulant fever	1
Therapeutic	5
Hypertensive cardiovascular disease	3
Placenta previa centralis	1

Preeclampsia, severe	1				
Other operations and procedures not including delivery					2077
Episiotomy				1343	
Central			1293		
Other			50		
Perineorrhaphy				148	
Indicated			89		
Elective			59		
Trachelorrhaphy				136	
Indicated			55		
Elective			81		
Sterilization				56	
Pomeroy			56		
Hypertensive disease		14			
Renal disease		4			
Section, previous		7			
Rheumatic cardiovascular disease		5			
Tuberculosis, pulmonary		1			
Multiparity		15			
Varicose veins, severe		2			
Deficiency, mental		1			
Uterus, rupture of		1			
Sclerosis, multiple		1			
Cervix, amputation of, high		1			
Cervix, carcinoma of		1			
History, obstetric, poor		1			
Placenta, premature separation of, repeated		1			
Rectum, stricture of, lymphogranuloma inguinale		1			
Amniorhexis for induction of labor				33	
Convenience		1			
Renal disease		1			
Preeclampsia		5			
Hypertensive disease		8			
Placenta, premature separation of, low implanted		1			
Vaginal bleeding, undetermined		1			
Presentation, transverse, with premature separation of placenta, partial		1			
Hydramnios, acute		1			
Placenta, premature separation of, partial		8			
Placenta, premature separation of, normally implanted		5			
Toxemia, unclassified		1			
Hysterostomatomy				20	
Proctoperineorrhaphy				53	
Head, manual rotation of				62	
Head, forceps rotation of				94	
Vagina, laceration of, repair				76	
Placenta, manual removal of				10	
Willett clamp, application of				15	
Fillet, application of				3	
Hemorrhoidectomy				1	

Colporrhaphy, posterior			1	
Dilatation and curettage			6	
Cyst, labium, incision and drainage			1	
Cyst, retention, vagina, removal of			1	
Shoulders, impacted, manual rotation of			1	
Head, aftercoming, forceps to			10	
Vagina, lacerations of, multiple, repair of			3	
Uterus, acute inversion of, replacement			1	
Bronchoscopy			1	
Hysterotomy, abdominal			1	
Hemangioma, left arm, excision of			1	
Number of patients discharged from hospital				2540
From prenatal clinic			990—38.98%	
White	212			
Colored	778			
From other sources			1550—61.02%	
White	1489			
Colored	61			
Private patients		1402—55.19%		
Unregistered clinic		148— 5.83%		
White	87			
Colored	61			
Number of patients transferred				0
Number of patients admitted				2542
Number of patients delivered for other services				4
Medicine			4	
Hypothyroidism		1		
Typhoid fever		1		
Arthritis, gonorrheal		1		
Cardiac disease with sudden death and postmortem section		1		
Number of viable babies				2991
In homes			825—27.59%	
White	77			
Colored	748			
In hospital			2166—72.41%	
White	1455			
Colored	711			
Full term living		2752—92.01%		
In homes		782		
White	69			
Colored	713			
In hospital		1970		
White	1366			
Colored	604			
Full term dead		63— 2.11%		
In homes		9		
White	1			
Colored	8			
In hospital		54		
White	21			
Colored	33			

Premature living		153—5.11%	
In homes		28	
White	3		
Colored	25		
In hospital		125	
White	61		
Colored	64		
Premature dead		23—0.77%	
In homes		6	
White	1		
Colored	5		
In hospital		17	
White	9		
Colored	8		
Deaths in live born babies			64—2.20%
In homes		5	
White	0		
Colored	5		
In hospital		59	
White	27		
Colored	32		
Total fetal mortality			150—5.01%
In homes		18	
In hospital		132	
Full term	77—51.3%		
Premature	73—48.7%		
Total maternal mortality			7—0.22%
In homes		0	
In hospital		7	
White	1		
Eclampsia, postpartum and cardiac failure	1		
Colored	6		
Eclampsia with pulmonary edema	1		
Eclampsia with cardiac failure	1		
Preeclampsia with shock	1		
Tuberculosis, miliary	1		
Rheumatic heart disease, severe, with failure	1		
Hemorrhage, postpartum	1		
Deaths in registered clinic patients		7	
Deaths in unregistered clinic patients		0	
Deaths in private patients		0	
Rate per 1000 live births			2.4

SUMMARIES OF MATERNAL DEATHS

No. 68534: An 18 year old colored patient, delivered spontaneously of a premature living male child weighing 2 pounds, 13 ounces, on January 2, 1944. Her temperature was elevated during puerperium and she was treated for endometritis. On January 11, 1944 she was discharged as improved but was readmitted on February 9, 1944 with findings of meningitis. She was treated with sulfadiazine and died on February 17, 1944.

Cause of death: Miliary tuberculosis, bilateral; tuberculous meningitis.

Autopsy findings: Miliary tuberculosis, tuberculous meningitis.

No. 73898: This white patient was 16 years old, registered, para 0-0-0-0. Her prenatal course was normal, the highest blood pressure reading being 120 mm. of mercury systolic and 70 mm. diastolic. The total weight gain was 5 pounds. All urinalyses were negative for albumin. She was admitted in active labor on July 21, 1944, fully dilated, with the head on the perineum. On admission the blood pressure was 170 mm. of mercury systolic and 110 mm. diastolic. She was given 3 gr. of nembutal and taken to the delivery room where under gas, oxygen and ether anesthesia she was delivered by low forceps, after a central episiotomy, of a full term living male child weighing 6 pounds, 9 ounces. The delivery and administration of anesthesia were uneventful. Immediately after delivery her blood pressure was 130 mm. of mercury systolic and 80 mm. diastolic. The findings of the urine obtained at the time of delivery showed 4 plus albumin. One and a half hours later the blood pressure was 190 mm. of mercury systolic and 110 mm. diastolic and the patient was given 6 dr. of paraldehyde orally. Some of this was not retained and she was given 8 dr. of paraldehyde rectally. Following this she went to sleep and could not be aroused. Ten hours after delivery she had two brief generalized convulsions and her blood pressure was 170 mm. of mercury systolic and 110 mm. diastolic. Seventeen hours after delivery her blood pressure reached 210 mm. of mercury systolic and 126 mm. diastolic. Suddenly within a few minutes her respirations became gasping and shallow, and then ceased.

Cause of death: Eclampsia postpartum.

Autopsy findings: Eclampsia; pulmonary congestion and edema; bilateral varicocele, broad ligament; subinvolution of uterus; lactating breasts.

No. 73346: A 23 year old patient, para 4-0-0-4, was admitted to the medical service from the cardiology clinic with severe rheumatic cardiovascular disease complicated by pregnancy of six months' duration. Her past obstetric history was essentially negative. Upon clinical examination on June 30, 1944 she was found to be about six months pregnant and there were early signs of decompensation. She was hospitalized at once and her condition improved. At an obstetric consultation on July 6, 1944 she was found to be twenty-eight to thirty weeks pregnant. Hospitalization until delivery was recommended, after which she was to be sterilized under local anesthesia. About noon on July 26, 1944 she suddenly became dyspneic and fell back in bed dead. A post-mortem section was done and she was delivered of a 36 weeks stillborn male child. The cord was pulsating weakly but the baby could not be resuscitated.

Cause of death: Rheumatic cardiovascular disease, severe.

Autopsy findings: Scarring of mitral valve; rheumatic heart disease; pulmonary congestion and edema; chronic passive congestion of liver and kidneys; hydrothorax, left; subinvolution of uterus; hysterotomy wound; hematoperitoneum; lactating breasts.

No. 74862: This patient was 29 years old, registered, para 1-0-0-1. The estimated date of confinement was October, 1944. She was admitted on August 21, 1944 after four generalized convulsions at home that day. Her prenatal course was uneventful. On August 20, 1944 she complained of intermittent abdominal pain and was thought to be threatened with premature labor. There were no signs of toxemia and she was sent home; her blood pressure and urine were not checked. Twelve hours later she was brought to the hospital in a comatose condition, with blood pressure of 230 mm. of mercury systolic and 140 mm. diastolic; the urine showed 4 plus albumin. Routine sedation and digitalization were administered but she failed to improve. On August 25, 1944 a 30 weeks dead macerated fetus was delivered spontaneously. The following day the patient went into shock and was treated with plasma. She remained comatose and respirations ceased on September 1, 1944.

Cause of death: Cardiac and respiratory failure attributed to uremia resulting from renal failure caused by eclampsia.

Autopsy findings: Generalized diffuse necrosis and fibrosis of the liver; icterus of scleras and body fluids; atrophy of mucosa of gallbladder; petechial hemorrhages, cortex of kidney, with necrosis of cortex, bilateral; considerable pulmonary edema, bilateral; moderate hydrothorax, bilateral; slight hydroperitoneum; moderate peripheral edema; subendocardial hemorrhages, left ventricle and right auricle; submucosal hemorrhages, bladder.

No. 75551: A 27 year old patient, registered, para 1-0-1-1, was admitted on September 14, 1944 at term and in early labor after a normal prenatal course. Shortly after admission she had a generalized convulsion. Her blood pressure was 200 mm. of mercury systolic and 130 mm. diastolic; the urine showed 4 plus albumin. She was given paraldehyde, 25% glucose, and digitalis. On September 15, 1944 she delivered spontaneously of a full term stillborn male child. About a half hour after delivery the patient went into deep shock but recovered after the intravenous injection of several pints of plasma. On the following day she again went into shock and this time she responded to whole blood transfusions. Her urinary output was almost zero. The blood pressure rose to 284 mm. of mercury systolic and 135 mm. diastolic and she remained comatose. On September 17, 1944 râles developed over the entire chest and respirations ceased shortly thereafter.

Cause of death: Pulmonary edema resulting from uremia caused by renal failure following eclampsia.

Permission for autopsy was not granted.

No. 76886: The patient was 32 years old, colored, registered, para 5-0-1-3. She was admitted at term not in labor, with a history of painless vaginal bleeding twelve hours prior to admission and again three hours after being admitted. The prenatal course was uneventful until this time. On admission the head was floating, the presentation was left occiput transverse, and her heart was normal. She was not bleeding and appeared to be in good condition. A sterile pelvic examination with preparation for immediate section revealed a partial placenta previa. There was profuse bleeding following the examination. Blood transfusion was started immediately and the section begun. She was delivered by laparotracheotomy of a full term live male child weighing 7 pounds, 15 ounces, left occiput transverse presentation. Profuse bleeding continued after the placenta was removed manually and the uterus did not contract readily following the administration of ergotrate and pitocin. The patient died in shock an hour and fifteen minutes postoperatively after receiving 1000 cc. of whole blood, 1000 cc. of plasma, 250 cc. of normal saline solution, ergotrate, pitocin, coramine, and oxygen.

Cause of death: Hemorrhage and shock postpartum as a result of placenta previa partialis, uterine atony.

Autopsy findings: Confirmatory.

No. 70747: A 15 year old patient, colored, para 0-0-0-0, registered, was admitted on March 25, 1944 with severe preeclampsia. She was treated conservatively but the pregnancy was not terminated because the patient was on the verge of convulsions. Signs of severe shock developed, with respiratory and cardiac failure. She did not respond to treatment and died undelivered twenty hours after being admitted.

Cause of death: Shock accompanying toxemia.

Permission for autopsy was not granted.

Number of serologic tests for syphilis in clinic patients		1716
White	266	
Colored	1450	
Number of positive results in clinic patients		236—13.69%
White	12	
Colored	224	
Number of positive results in clinic patients treated		205
White	11	
Colored	194	

Full term alive	174—84.87%	
Full term dead	7	
38 weeks dead	2	
Anencephalic monster	1	
36 weeks alive	5	
36 weeks dead	2	
34 weeks alive	2	
32 weeks alive	2	
32 weeks dead	1	
28 weeks alive	2	
26 weeks abortion	3	
24 weeks abortion	1	
20 weeks abortion	2	
Undetermined	2	
Number of positive results in clinic patients not treated		31
White	0	
Colored	31	
Full term alive	20—64.51%	
Full term dead	4	
36 weeks alive, twins 1 set	1	
34 weeks dead	1	
32 weeks alive, twins 2 sets	2	
23 weeks abortion	1	
Undetermined	1	
Undelivered	1	
Number of clinic patients without serologic test for syphilis		1

Material Mortality Covering Seven Year Period

	1938	1939	1940	1941	1942	1943	1944
Pregnancy, abdominal	1						
Abruptio placenta	2	1	1				
Shock, intrapartum (without hemorrhage)	1						
Embolus, pulmonary	1						
Infection, puerperal	1		2	1	1		
Uremia	1						
Reaction, transfusion	1						
Anesthetic	1	1	2			2	
Heart disease, rheumatic-decompensation	1		1				1
Liver, acute yellow atrophy of		1					
Cardiovascular collapse		1	1	1	1	1	
Cardiac dilatation		1	1		1		
Uterus, rupture of		1	1	1		1	
Hemorrhage, intracranial			1	2			
Arsphenamine encephalitis				1			
Tuberculosis				1	1		1
Embolus, cerebral				1			
Leukemia, acute myeloid				1			
Eclampsia, ante and intrapartum				1			3
Hemorrhage, postpartum						1	1
Ileus, paralytic					1		
Adrenal gland, insufficiency of					1		
Preeclampsia, severe, with shock							1
Total 54	10	6	10	10	6	5	7
Rate per 1000 Live Births	5·4	3·0	4·4	3·9	2·0	1·6	2·4

COMMENCEMENT ADDRESS*

REAR ADMIRAL W. J. C. AGNEW (MC), U.S.N.†

When circumstances prevented him from coming to these commencement exercises today at the University of Maryland, the Surgeon General of the Navy, Vice Admiral Ross T. McIntire, asked me to convey his most sincere regrets to you members of the medical and nursing graduating classes and to your distinguished Dean, General Patterson. Admiral McIntire's absence is most unfortunate for I know he wanted to be here today and he would have had a stimulating message. Appearing here in his stead, I shall try to do no more than present a few observations which I think might have interested me when I was in your shoes some thirty years ago.

Right at the outset, however, I find myself handicapped in attempting to fulfill that objective. The medical graduate of three decades ago had little in common, with respect to the complexity of future prospects, with you young men and women of the 1945 graduating class. In the fundamentals there is little difference between us. There was only one Hippocratic oath then and there is only one Hippocratic oath today. Medicine was to be our career and we would practice our chosen profession conscientiously and industriously. But from almost every other standpoint the medical graduate—and this may be said to be true, though to a lesser degree, of the nursing graduate—of 1945 enters into a different world professionally, politically, and economically. The changes which three decades have witnessed are most remarkable. I shall not say "terrifying" for I do not wish to add to the trepidation which you young men and women must feel, and in this respect I think you and I are not much different from my own cap-and-gown incarnation, as you prepare to embark upon your life's work.

In peacetime the medical student completed his classroom learning, took his internship, then perhaps a residency, and in most instances went right into private practice. Today all this has changed. True, the majority of you are bound for service in the Army or the Navy, but even so many questions are assailing your minds. What sort of duty will I have? How long will I be in uniform? Should I plan to remain in the service; if I have the opportunity, after the war is over? Will I have a chance to specialize? Will my interests be protected while I am in the service, assuming that I will be returned to civil life soon after the war ends?

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* Given at the Commencement Exercises of the University of Maryland School of Medicine and College of Physicians and Surgeons, and the University of Maryland School of Nursing. The Lyric, June 22, 1945.

† Assistant Chief, Bureau of Medicine and Surgery.

And as to those of you who are not in the Army or the Navy, your problems are equally complex. Your internships will pass only too quickly and even before this stage of your education is over you will be confronted with the necessity of making many important decisions. Already you must be concerned with such controversial problems as distribution of medical care, private versus group practice, Federal and State assistance, health insurance, and so on. I only hope that as time goes on and you are called upon to make your decisions, one by one, that you will have some time, in between the filling out of questionnaires and listening to speeches and reading arguments pro and con, to practice a little medicine now and then.

Wherever your avenues may lead, all of your shoulders bear a common responsibility, which is this: In graduating from the University of Maryland and in being residents of the Old Line State, as most of you are, you have a proud and venerable tradition to uphold. Since the founding of this republic, the State of Maryland has occupied a high place in the annals of the United States Navy. Benjamin Stoddert, the first Secretary of the Navy, was a Marylander. The first Superintendent of the U. S. Naval Academy, Commodore Franklin Buchanan, was a Baltimorean. The famous old warship Constellation, first United States ship to go to sea under the constitution, weighed anchor off Baltimore. Spanning a century and a half in a few minutes, it is worthy of mention that Admiral Raymond Ames Spruance, whose record of accomplishment in the Pacific War is familiar to you all, is a native of this State. If I may focus your attention for a few minutes not merely upon the Navy but upon naval medicine, I should like to remind you that it was a Marylander and a graduate of this University who was Admiral McIntire's immediate predecessor as Surgeon General and Chief of the Bureau of Medicine and Surgery. He is Rear Admiral Perceval S. Rossiter and, although he has been in retirement from the Navy since 1938, he has occupied a position of great responsibility continuously since that date in one of Washington's large hospitals.

The Navy, as you know, has undergone tremendous expansion since our late President declared a period of National Emergency. The Medical Corps expanded from 826 to its present strength of over 13,000; the Dental Corps from 500 to nearly 7,000; the Nurse Corps from 600 to 11,500; and the Hospital Corps from 5,000 to approximately 128,000—a number larger than the entire Navy personnel a few years ago. There are 14,000 Waves in the Hospital Corps of the Navy and an additional 10,000 Waves are now being recruited for training in duties of the Hospital Corps.

I don't have to tell you of the valor and devotion of our fighting men—Army, Navy and Marines—on Okinawa. What many of you may not know, however, is that the Chief Medical Officer of the First Marine Division on Okinawa was graduated from this medical school in the class of 1925.

Capt. J. W. Kimbrough is the Division Surgeon to whom I refer. The manner in which he has carried on his duties since the campaign for possession of that Pacific milestone on the road to Tokyo was started last Easter Sunday is an enviable reflection upon the training that is given at the University of Maryland School of Medicine.

Captain Kimbrough is but one of more than 200 graduates of this school who are on active duty in the Navy Medical Corps today. You will find fellow alumni in the skies with our aviation units and below the surface of the sea in our submarine service. They are serving in our great fleet and base hospitals overseas, in warships of every type, in our growing fleet of hospital ships and in Naval hospitals and dispensaries scattered over the face of the earth. The Navy's roster of heroes includes the name of Lieut. (j.g.) Samuel S. Miles, Medical Corps, U. S. Naval Reserve, whose home was here in Baltimore. He received the Silver Star Medal posthumously and I should like to read the citation, which is as follows:

"For conspicuous gallantry and intrepidity while attached to Headquarters Company, First Marine Raider Battalion, during the attack on enemy Japanese forces on Tulagi, Solomon Islands, on August 7, 1942. Knowing that three men of another Company had been killed and numerous others wounded, Lieut. (j.g.) Miles, with utter disregard for his own personal safety, attempted to cross a zone swept by hostile fire in order to administer first aid to the wounded and isolated men and was killed by the enemy. His great personal valor and heroic devotion to duty were in keeping with the highest traditions of the United States Naval Service. He gallantly gave up his life in the defense of his country."

Young women whose homes are in the State of Maryland likewise have distinguished themselves in the Navy Nurse Corps. One of them became the first Navy nurse ever to be awarded the Bronze Star Medal. She is Comdr. Mary Martha Heck, who is now on duty in the Bureau of Medicine and Surgery as Assistant Superintendent of the Nurse Corps. Another is Lieut. Comdr. Mildred A. E. Marean, who is soon to complete an arduous tour of duty as Chief Nurse of the Hospital Ship Refuge, to which she has been attached since the ship was commissioned in Baltimore in March, 1944. I only wish that security regulations did not keep me from telling the whole story of this ship's experiences in the Pacific since she put to sea. If time permitted, I could go on almost endlessly in praise of Marylanders serving in the Medical Department of the Navy, and that goes for the Dental and Hospital Corps as well as for the Medical and Nurse Corps. Their record is so lustrous that sometimes I wonder if I shouldn't have followed my brother's example and come here for my medical education instead of taking it, as I did, at a Yankee school in New England.

A few minutes ago I posed several questions. Or to be more accurate, I speculated aloud on the questions that I believe are uppermost in your minds. But I didn't give the answers. Let me attempt to supply some of the answers as best I can, insofar as the questions apply to service in the Navy. Obviously I am not so rash and certainly not so clairvoyant as to presume to advise you on matters pertaining to civilian medical practice, either in the near or distant future.

Addressing myself in the main, then, to those of you who will come into the Navy let me say at the very start that you are in for a pleasant duty. You will be plagued, of course, with your share of paper work and occasional chores that you feel are outside your line, and a thousand and one other minor irritations peculiar to military life. You will survive these, I am confident, and very early come to appreciate the numerous advantages of naval service. The greatest of these is the least tangible. It is the realization of an indispensable duty to perform, a great obligation to discharge. There is a tremendous job to be done, believe me. In the Navy Medical Corps today approximately 13,000 officers are on duty and this total is only a little more than half of the authorized allowance. By judicious selection and careful training of our hospital corpsmen, who have fitted in splendidly as assistants to our medical officers, we have managed to get along with the doctors we have but all of them are kept busy, you may be sure. Paradoxical as it may seem, this very shortage of medical officers is working an advantage to the doctors themselves for necessity is giving them an opportunity to try many different types of duty. Today the young Navy doctor is the exception who, within the span of a few months, does not have his quota of appendectomies, who does not see a goodly number of rheumatic fevers and malarias, and who is not called upon to care for battle injuries of every description.

On the other hand, we are not blind to the wisdom of specialization, both for the good of the service and for the good of the individual practitioner. The great majority of our naval hospitals in the United States are giving both residency-type and internship training. We are turning out doctors who are equally at ease in a surgical or a medical ward but we are also turning out doctors who, after a relatively short period of rotational duty, will be free to devote themselves to ophthalmology, internal medicine, surgery, and all of the other specialties. Since the beginning of the war and more particularly in the past year we have worked hard to build up our Naval hospitals as first-rate centers for internship and residency-type training. This has been done primarily for the purpose of improving the standards of medical care of Naval patients. Benefits accruing the doctors themselves are incidental. But they are no less real. Whether the men taking this training choose to stake their careers to the Navy or go into civilian practice at the war's close, they will profit greatly by the experience. It is a happy commentary that more and more of our medical officers are gaining the necessary qualifications for certification by the various American Boards.

Another salutary feature of the Navy medical service is the respect which exposure to it engenders for preventive medicine. Here is a field that has been taken too much for granted. That is to say, we doctors have always complacently agreed that venereal infection, malaria, and some other common diseases are bad things and ought to be abolished, and then we have gone ahead and forgotten about them. The Navy has proved that preventive medicine can actually wipe out certain diseases and reduce others to low levels. Working in association with entomologists, sanitary engineers and strong-backed hospital corpsmen and Seabees, our doctors have rid Pacific islands of malaria-carrying mosquitoes which a year or two ago laid whole regiments low. Typhoid fever is a rarity in our fighting forces. Tetanu is practically unknown in our fighting forces. Venereal disease, while far from conquered, has been proved to he vulnerable not only to the sulfonamides and penicillin but to educational attack. I have talked to medical officers of the Naval Reserve, just returned from overseas assignments, who could hardly believe the stories they themselves told about the dramatic elimination or reduction of health hazards as they affected the men in their charge.

In closing I am constrained to leave with you the same admonition that was delivered to the medical graduates of Georgetown University a few days ago by Lieut. Comdr. Joseph T. O'Callahan, who was Chaplain of the U.S.S. Franklin. "Take life seriously," Father O'Callahan urged, and with the same emphasis he made it clear that he did not mean that you should take *yourselves* seriously. Just as he did, I would urge you to take your obligations to your profession, your country, and your God seriously. Upon the medical graduate of June, 1945 the times are thrusting a burden of responsibility that will not be easy to bear. In accepting this burden with a spirit of humility and a determination to follow your profession with earnestness and industry, you can not but succeed.

PUBLICATIONS BY THE STAFF OF THE SCHOOL OF MEDICINE, UNIVERSITY OF MARYLAND

1944*

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DEPARTMENT OF GROSS ANATOMY

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SMITH, D. C.

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Krantz, J. C., Jr.

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UNIVERSITY HOSPITAL RESIDENT STAFF

Briele, H. A.
see Kohn, S. G.
Honigman, A. H.
see Townshend, W. H., Jr.
Kohn, S. G.
(with Briele, H. A. and Douglass, L. H.) Volvulus complicating pregnancy. Am. Jour. Obst. and Gynec., **48**: 398–404, 1944.
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MONTHLY MEETINGS OF THE UNIVERSITY HOSPITAL STAFF

The following is an abstract of the paper presented by Francis A. Ellis, M.D., Department of Dermatology and Syphilology, at the monthly meeting of the University Hospital staff held on June 14, 1945.

BOECK'S SARCOID VERSUS TUBERCULOSIS*

FRANCIS A. ELLIS, M.D.

The term sarcoid first was used in 1899 by Boeck and since then many other names have been given to this syndrome. Some of the more common synonyms are lupus pernio, Besnier-Boeck disease, benign lymphogranulomatosis (Schaumann), Mikulicz's disease, uveoparotid fever, and osteitis tuberculosis multiplex cystoides (Jüngling). Even before Boeck's original description, sarcoid was recognized as a generalized disease by Hallopeau, Hutchinson, and Besnier. Most of the patients suffering from this condition in the United States are negroes. Reisner (1) reported that the lymph nodes are involved in all cases, the lungs in 95 per cent, the mediastinum in 90 per cent, the skin in 40 per cent, the bones in 35 per cent, spleen in 25 per cent, and the liver in 20 per cent, but any organ of the body may be affected. A comparison of osteitis tuberculosis cystoides and spina ventosa, true tuberculosis dactylitis, demonstrates clearly the differences between sarcoid and tuberculosis.

	SARCOID OF THE BONE	TUBERCULOUS DACTYLITIS SPINA VENTOSA
Caseation	no	yes
Sequestration	no	yes
Sinus formation	no	yes
Cysts	no	yes
Demonstration of tubercle bacillus	no	yes
Allergic	no, anergy	Allergic

Four patients with sarcoid of the skin were demonstrated. Three showed bone changes, two mediastinal lesions, and one had keratitis. One of the patients was reported previously (2, 3). His skin lesions healed with scarring and the bone changes have remained essentially stationary; however, he has total functional disability of his hands.

The pathology of sarcoid as described by Boeck is characterized by well defined nests of epithelioid cells, with occasional centrally located giant cells, a few small mononuclears at the border, without any evidence of necrosis. Actually many of the dermatologic sections done in this department showed some necrobiosis or slight necrosis. In the differential diagnosis one must consider leprosy and tuberculosis, but most investigators consider the disease a definite clinical entity of an etiology as yet undetermined.

The internal manifestations were discussed by Hugh J. Welch, M.D., the pathologic changes by John A. Wagner, M.D., and the bone changes by Allen F. Voshell, M.D.

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* From the Department of Dermatology and Syphilology, School of Medicine, University of Maryland.

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Abstract of Discussion by John A. Wagner, M.D.

Sarcoid was described as early as 1875 by Hutchinson. In later years numerous contributors have added to the knowledge of the disease so that now it is considered pathologically as a systemic disorder of the reticulo-endothelial tissues. It presents the features of chronic infectious granuloma, usually benign, occasionally fatal, sometimes spreading from one tissue or organ to another, frequently relapsing, resistant to radiation, and at times healing spontaneously. Although its etiology remains obscure, it is considered not to be tuberculous. Recent investigations have shown that such previously considered clinical entities as Mikulicz's disease and uveoparotid fever are, in reality, manifestations of sarcoid.

The disease is one of middle life and occasionally is found as a solitary nodule. Recent electrophoretic studies of blood proteins by Fisher, Davis, and Carroll have shown hyperproteinemia with a decreased albumin and an elevation of the gamma globulin to exist. Increased blood calcium, an increase in basic phosphatase activity, impaired hepatic function, eosinophilia, increased sedimentation rate, and Bence-Jones proteinuria are noted occasionally upon examination of the blood.

The experiences in the pathology laboratory of the University Hospital were limited to one autopsy and seven biopsies. Three of the patients were males and four females. The youngest was seventeen years of age and the oldest forty-two, the average age being twenty-seven years. The single autopsy was done in a case of widely disseminated sarcoid with cerebral involvement, this being the cause of death.

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The names listed above are officers for the term beginning July 1, 1945 and ending June 20, 1946

NEWS FROM THOSE IN THE ARMED FORCES

CITATIONS AND AWARDS

AIR MEDAL

Brig. Gen. George W. Rice, Class of 1916, has been awarded the Air Medal for participation in hazardous aerial flights in connection with his duties as chief surgeon, Eighth Army Headquarters. The citation stated that "his courage and devotion to duty reflect the highest credit on himself and the military service."

Before going overseas General Rice served a tour of duty as assistant commandant of the Medical Field Service School at Carlisle, Pa. Prior to joining the Eighth Army he was surgeon for General Headquarters of the Southwest Pacific.

SILVER STAR

Capt. Manuel Brown, Class of 1938, has been awarded the Silver Star for entering an unmarked mine field at great personal risk to supervise the evacuation of wounded men. He was cited for gallantry in action on August 1, 1944, when as a battalion surgeon of the 190th Field Artillery, on duty in France, he led his detachment into the unmarked field three times and brought out three soldiers and a French civilian who had been wounded seriously. This feat was classed as "above the call of duty," since as battalion surgeon he could have ordered subordinates to effect the rescues.

BRONZE STAR MEDAL

Capt. Michael L. DeVincentis, Class of 1941, was awarded the Bronze Star Medal for meritorious achievement at Morotai, Netherlands East Indies, and Manila, Luzon, Philippine Islands, from November 10, 1944 to June 26, 1945. During this period he was battalion surgeon of his unit. In this capacity he worked tirelessly, without regard for his own welfare, to care for the sick and wounded under extremely adverse weather conditions. He organized and operated the battalion dispensary to an unusual degree of efficiency in caring for members of his unit and those of neighboring attached units.

After his arrival in Manila Captain DeVincentis was able to reduce the battalion's venereal disease rate 50 per cent in one month. Through his tireless effort he kept to a minimum the time lost through sickness and injury.

Capt. Robert E. Lartz, Class of 1940, was awarded the Bronze Star Medal for meritorious achievement in a ceremony at Heidelberg, Germany. Captain Lartz is assistant chief of surgical service of the 11th General Medical Dispensary of the Sixth Army Group and was responsible for providing medical care to the group.

PROMOTIONS

Comdr. Christopher C. Shaw, M.C., U.S.N.R., Class of 1931, recently was promoted to the rank of Captain. His present assignment is chief of medicine at the U. S. Naval Hospital, Corpus Christi, Texas.

Capt. Eugene S. Bereston, Class of 1937, has been promoted to the rank of Major. He is chief of the dermatology and venereal disease section and venereal disease control officer at DeWitt General Hospital, Auburn, Calif.

NEWS ITEMS

Col. George H. Yeager, M.C., A.U.S., is the commanding officer of the hospital ship Marigold, the first American vessel to tie up in Tokyo harbor since December 7, 1941. Included in the personnel are a number of alumni who were members of the original 42nd General Hospital which began its military career early in 1942.

Lieut. Col. Theodore A. Schwartz, Class of 1934, has been appointed commanding officer of the Holland Park Hospital, comprising the 153rd, 85th, and 86th Station Hospitals in Brisbane, Australia.

Lieut. Comdr. Edward S. Kallins, Class of 1934, in relating his experiences with thousands of Okinawans, writes:

"In good times these people are pitifully poor and now they have nothing,—no souvenirs, no money, especially American, and no homes of their own. Therefore, they do not have inflation on their island. They live in compounds, are fed and clothed by military government, and do not try to buy things. They have nothing to buy with and, what is more, they do not have to buy for it is given to them.

"The able-bodied men and women work on projects for themselves and for the Armed Forces, for which they will be paid eventually. The only inflation here is between Americans. The G.I.'s, Marines and Seabees are known to sell flags, Jap rifles and swords to men on the ships for good prices."

Lieut. Comdr. Samuel Steinberg, Class of 1936, is chief of the orthopedic and physiotherapeutic departments at the U. S. Marine Hospital, New York City.

Capt. Irvin P. Klemkowski, Class of 1937, is a flight surgeon for one of the 67th Tactical Reconnaissance Group squadrons.

In November, 1942 Captain Klemkowski entered Officers' Candidate School at Miami Beach, Fla. and upon finishing his training was assigned to the School of Aviation Medicine at the same station. Besides the badge for Presidential Unit Citation he wears the European Theater of Operations campaign ribbon with four battle stars.

Lieut. Dan F. Keeney, Class of December, 1943, graduated from the Army Air Forces School of Aviation Medicine, Randolph Field, Texas in June, 1945. The intensive course in aviation medicine which Lieutenant Keeney completed is one prerequisite for attaining the wings of a flight surgeon in the Medical Corps, U. S. Army Air Forces.

Lieut. Charles A. Kemper, Class of December, 1943, graduated from the Army Air Forces School of Aviation Medicine, Randolph Field, Texas on September 15, 1945.

Dear Friends:

I am on Leyte Island in the Philippines. Dr. Herbert Reifschneider is located here also. I see him occasionally. A Dr. Cooper, Class of 1938, stopped by a few days ago. He practiced in Towson several months. Also a Dr. Fink. Major Woodward addressed a medical meeting here. He married Dr. Lauve, a member of his class at U. of M. I had a letter from Dr. Charley Edmonds who is in Calcutta, India with the 142nd General

Hospital. Says he is among good friends. The other unit from Brisbane is in Manila. When I went through Brisbane I was denied the opportunity of visiting Tom Coonan's grave because of the short time I was there. I like Sydney and Melbourne much better than Brisbane. Here on Leyte we are in the dry season. It just can't rain. The weather is very, very hot. One loses all desire to do any work. Our camp is located in a swamp and living conditions have been very bad up to now. However, certain conditions have changed and we are now cleaning out the camp site, putting floors in, and screening all tents.

The most interesting thing that has happened to me was to cover the bombing of an important island and city of the Philippines and the next day to go back and watch the invasion. I got there early in the morning. The bombers and fighters were going over the area. Then the Navy gave it a good shelling, and then the small landing barges started for shore. We made several rescues. I had an exceptionally good view of it all since I was in a seaplane and we could fly all over the area. We were in the air for thirteen hours so we were around long enough to see that the boys got a good start. It's practically all over now and the island is in our hands.

The war has left the natives around here very poor. The laborers get 50 cents per day. In small towns eggs are 20 cents each. Small watermelons, the kind we would not eat back home, are $1.25 each. Small bananas are 15 cents. Everything is scarce and high. We eat only at Army mess halls for most of the people have intestinal parasites which are transmitted by handling food.

Time goes fast here and yet it goes slow. I will be glad to get back to the U. S. We are anxiously awaiting orders to move nearer the front—strange but one likes to be up where excitement is going on.

I have very little medical work to do—first and mostly I have been assigned as malarial control, sanitation and mess officer, besides the flight surgeon's duties.

Sincerely yours,
Paul Byerly

ITEMS

The Ohio Chemical and Manufacturing Company has awarded $4,000 to the Department of Pharmacology of the School of Medicine, University of Maryland. This fund is to be used under the direction of Dr. John C. Krantz, Jr., Professor of Pharmacology, for continuing the studies in anesthesia. Dorothy K. Shipley has been appointed a fellow in pharmacology under this grant.

The Board of Trustees of the United States Pharmacopoeial Convention has again granted $2,800 to Dr. Krantz for studies in pharmacopoeial revision.

OBITUARIES

BENJAMIN PUSHKIN, M.D.

April 1, 1887-September 8, 1945

Dr. Benjamin Pushkin, born in Vitebsk, near Smolensk, White Russia, on April 1, 1887, had his preliminary education in the Vitebsk Gymnasium, completing his high school courses at the Academie de Science, Liege, Belgium.

He was the son of Israel and Gussie (Stamm) Pushkin. He became a naturalized citizen of this country in 1914, the year he was graduated *cum laude* in medicine at the University of Maryland.

The following year he was appointed to the faculty of the University of Maryland as assistant in neurology, became instructor in 1916, associate in 1924, and assistant professor of neurology in 1927.

As an earnest student he absented himself from 1932 to 1935 and continued his postgraduate studies in neuropsychiatry at Vienna, Austria, where he met and married Lydia Block, of Vienna, in 1935. He gave much of his time to charitable institutions. He was consultant neuropsychiatrist to the Levindale Home for the Aged and Infirm, and worked in the outpatient clinics of the University and Sinai hospitals. He was a diplomate of the American Board of Psychiatry and Neurology, a fellow of the American Medical Association, and a member of the Medical and Chirurgical Faculty of Maryland.

This kindly man, whose surcease from arduous clinical and teaching duties was found in music, will be greatly missed by his friends, members of this faculty, and grateful patients.

Leon Freedom, M.D.

OBITUARIES

Arbuckle, Harvey, Boontown, N. J.; P. & S., class of 1904; aged, 71; died, May 13, 1945, of congestive heart disease and pernicious anemia.

Arnold, Guy Frank, Washington, D. C.; B.M.C., class of 1900; aged 68; died, May 26, 1945, of gastric hemorrhage and cerebral thrombosis.

Bunn, James Pettigrew, Rocky Mount, N. C.; class of 1935; aged 35; died, April 5, 1945.

Butler, Maurice Joseph, Newport, R. I.; P. & S., class of 1906; aged 61; died, May 4, 1945, of valvular heart disease and chronic diffuse nephritis.

Chipley, Bascomb Lanier, Chillicothe, O.; class of 1906; aged 61; died, May 13, 1945, of heart disease.

Daly, Daniel Joseph, New York City; B.M.C., class of 1905; aged 64; died, February 10, 1945.

Davis, William Alva, Baltimore, Md.; B.M.C., class of 1898; aged 70; died, March 28, 1945, of carcinoma of the stomach.

DeArmon, John McCamie, Charlotte, N. C.; class of 1886; aged 87; died, April 22, 1945, of acute dilatation of the heart.

DeMartini, Stephen A., Cleveland, O.; P. & S., class of 1915; aged 58; Senior Surgeon, U. S. Public Health Service; died, December 23, 1944, of coronary attack.

Franks, Horace Lee, Baltimore, Md.; P. & S., class of 1892; aged 77; died, April 2, 1945.

Haviland, Walter Childs, Mansfield Depot, Conn.; B.M.C., class of 1904; aged 63; died, May 14, 1945, of heart disease.

Hughes, Samuel Edward, Danville, Va.; P. & S., class of 1891; aged 80; died, April 9, 1945, of myocarditis and pernicious anemia.

Lange, Henry Alfred, Providence, R. I.; P. & S., class of 1909; served during World War I; aged 60; died, May 22, 1945, of injuries received in a fall, polioencephalitis, and hypertensive cardiovascular disease.

Leatherman, Daniel Isaiah, Greensburg, Pa.; P. & S., class of 1886; aged 84; died, March 31, 1945, of angina pectoris.

Milholland, Edward V., Baltimore, Md.; class of 1895; aged 71; died, September 11, 1945, at the University Hospital after a brief illness. He was appointed medical and surgical director of the Baltimore and Ohio Railroad in 1930 and served in that capacity until his death.

Ordway, Clarence S., Toledo, O.; B.M.C., class of 1902; aged 72; died, April 27, 1945.

Patton, John William, Cahool, Mo.; class of 1886; aged 84; died, March 17, 1945, of ascites and cerebral hemorrhage.

Pelusio, August Nob, Paterson, N. J.; P. & S., class of 1913; aged 64; died, April 29, 1945, of pulmonary edema and arteriosclerosis.

Sawyer, Leroy L., Great Bridge, Norfolk, Va.; class of 1890; aged 82; died, June 13, 1945.

Scott, William Dodds, Jr., Baltimore, Md.; class of 1904; served during World War I; aged 66; died, April 16, 1945, of congestive heart disease and hypertensive cardiovascular disease.

Walkonig, Christian, Atlanta, Ga.; P. & S., class of 1902; aged 66; died, April 13, 1945, of cirrhosis of the liver.

Wright, Martin Frank, Burlington, W. Va.; class of 1890; aged 75; died, June 21, 1945, of cerebral hemorrhage.

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COMPENSATORY MECHANISMS RELATED TO THE KIDNEY*†‡

D. L. REIMANN, M.D.

BALTIMORE, MD.

The satisfactory functioning of the kidneys depends upon maintenance of normal blood pressure, adequate blood flow, integrity of the renal parenchyma, and proper hydration. Prolonged disturbance of any of these factors results in the retention of nitrogenous waste.

Extrarenal excretion of nitrogenous matter may be set aside, at once, for its insignificance. The skin can dispose of 0.7 grams (11) of nitrogen per day in approximately 2000 cc. of insensible perspiration. The intestinal epithelium can excrete 0.5 grams of nitrogen a day. About 0.1 gram of nitrogen is immobilized in the growth of hair and nails. When the above figures are compared with the 15 grams of nitrogen excreted in 1500 cc. of urine, the extrarenal excretion of nitrogen becomes insignificant. Diaphoresis as a measure to aid nitrogen excretion is of little value and probably harmful because of the excessive fluid loss necessary to mobilize even a small quantity of nitrogenous waste. Nitrogen excretion by the skin could equal that of the kidney only by expending 50,000 to 100,000 cc. of fluid.

The essential force which urges the passage of the plasma filtrate into Bowman's capsule is the hydrostatic pressure within the glomerular capillary. The glomerular capillary pressure is considered to be approximately 70 per cent of the arterial pressure (1). In an individual having a normal blood pressure of 120 mm. of mercury the glomerular capillary pressure may be assumed to be 80 mm. of mercury (12). The oncotic pressure of the blood plasma, which is normally 25 to 30 mm. of mercury (1), and the pres-

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* From the Department of Pathology, School of Medicine, University of Maryland.

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sure within Bowman's capsule, which is 5 to 10 mm. of mercury, opposes an unhampered filtration of plasma. The algebraic sum of these pressures is the actuating force of glomerular filtration or the renal filtration pressure. To assure a filtration pressure above zero, an arterial pressure over 60 mm. of mercury is necessary. A blood pressure maintained even at 70 or 80 mm. of mercury will result in evidence of renal impairment in several hours (4). Oliguria and azotemia will then appear (2). It is upon this basis that nitrogen retention in shock and heart failure may be explained.

Impaired renal function becomes manifest when the blood flow through the kidney is decreased incident to cardiac decompensation or obstruction to the renal vascular system. According to Macleod, the heart output is reduced to 55 or 60 per cent of normal in decompensation (5). A reduction of just 10 to 20 per cent will result in serious physiologic derangement if such a reduction is maintained. In a normal individual a heart output of 64 cc. per kilogram of body weight per minute is necessary to satisfactorily nourish the body organs in a healthy state of function (10). Any deficiency in this blood supply results in deficient renal excretion. Sixty-seven liters of plasma must pass through the glomerular tufts and be filtered to produce 1 liter of urine. In delayed or inadequate circulation the plasma clearance is decreased and the urine output becomes unsatisfactory. Again, oliguria and azotemia may result. The onset of oliguria and azotemia may be combated by stimulating with diuretics an increase in the number of functioning nephrons.

In certain diseases of the kidney, extensive parenchymal destruction finally leads to renal insufficiency. In this group one might include glomerulonephritis, advanced hydronephrosis, pyonephrosis, pyelonephritis, nephrosclerosis, and, in effect, the operative removal of kidney tissue. In the last-mentioned condition, a compensatory hypertrophy of the remaining kidney tissue occurs. There is no increase in the number of nephrons but merely an increase in size. In this condition, like the others mentioned previously, the compensation is in part caused by calling upon the reserve capacity of the kidney. It is said that only 20 per cent or less of the renal units function at any one time. In the course of effacing diseases of the kidney, as the involved excretory units are obliterated, theoretically, a corresponding number of nephrons are added to the functional group at the expense of the reserve. It is, therefore, noticed that a lag occurs between the onset of the renal disease and the period in which uremia has its onset. It is not until the reserve is consumed that signs of renal insufficiency appear (3).

The regeneration of complete nephrons does not occur. Attempts at compensation for destroyed renal units exist in the remarkable hypertrophy that takes place in the remaining nephrons. One such structure may en-large to attain the size of fifteen normal nephrons (9). However, its physiologic capacity is not increased in the above proportion. It has been well established that destroyed tubular epithelium is capably replaced by a new growth of epithelial elements (6). These relined tubules are able to function as before and serve as an excretory tissue (8). The healing of glomerular tissues, particularly, the capillary endothelium and Bowman's epithelium, exists as a factor, only, in acute, short-lived infections or intoxications. If the destruction of the glomerulus advances to scarring its function cannot be recovered.

Aglomerular nephrons may persist in diseases leading to obliteration of the glomeruli. The nephron then consists of a tubule alone, which functions in absorption and secretion. The filtration element of urinary excretion is no longer possessed by the involved nephron.

A positive water balance is essential for proper renal function. Water loss in the body is seen in the form of 1500 cc. of urine, 2000 cc. of vaporized fluid from the skin and lungs, and 150 cc. of intestinal excrement. The water loss can, of course, be varied by polyuria, exercise, the temperature and humidity of environment, fever, vomiting, and diarrhea. The sources of water are ingested fluid and water arising from metabolic processes. For the maintenance of a proper state of hydration, the above forms of fluid loss must be compensated for by the ingestion of a like volume. If the fluid loss is increased or ingestion decreased, dehydration appears. A resultant decrease in blood volume, an increased concentration of blood proteins and electrolytes, and associated increased plasma oncotic pressure lead to decreased urine output and ultimate nitrogen retention.

In addition to the necessity of proper fluid intake, it is essential that fluid introduced into the body be mobilized. This mobilization of fluid is dependent upon the plasma protein level, and the balance of crystalloid osmotic forces within the vascular system and tissues outside the vessels. The importance of this concept is noted in starvation edema and hypoproteinemia from other sources. It is, therefore, seen that azotemia may appear not only in dehydration but in edematous conditions in which fluid is present in excess in the extravascular tissues, where it is stagnant and incapable of engaging in the processes involved in urine formation and excretion.

According to the foregoing, azotemia in shock is corrected by rebuilding the blood volume and elevating the blood pressure; in cardiac failure, measures must be taken to permit compensation and reduction in circulation time; in diseases leading to irreversible destruction of kidney tissue, diuretics which stimulate function in a greater number of nephrons and increase of blood pressure must be employed; in negative water balance, the fluid intake must be supplied perorally or parenterally.

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THERAPEUTIC ABORTION

ISADORE A. SIEGEL, M.D., F.A.C.S. AND CAPT. SCHUYLER G. KOHN, M. C., A.U.S.*†

BALTIMORE, MD.

The question of when to perform a therapeutic abortion is not always a simple problem. Frequently the obstetrician is advised by his medical colleague to interrupt a pregnancy on grounds that are not at all times clear-cut. On other occasions the obstetrician may feel that a pregnancy should not be allowed to continue because of some obstetric complication which may not be approved by his fellow obstetrician. Then again eugenic, social, and economic factors, which always raise considerable difference of opinion, are involved in a certain number of cases.

Hasseltine, Adair, and Boynton have defined therapeutic abortion as follows: "Therapeutic abortion means the termination of an apparently normal intrauterine pregnancy before the period of viability in an effort to save or prolong the life of the mother." The authors have accepted this definition and accordingly have reviewed all therapeutic abortions performed at the University Hospital from 1924 to 1943 inclusive. Thus, no pregnancy interrupted after twenty-eight weeks of gestation was considered.

This study consists of eighty cases of therapeutic abortion. In the group there were forty-eight white and thirty-two negro patients. Fifty-six were clinic patients and twenty-four were private ones. The incidence for all hospital admissions was one in 207 cases, whereas it was one in 500 cases for all out- and in- patients delivered. In Table I are listed the indications. This table shows the tendency over a period of twenty years in the direction of conservatism and rather strict adherence to the definition quoted. The toxemic group, which includes hypertensive vascular and hypertensive vascular renal disease and chronic nephritis, continues to be the one principal indication for abortion throughout this same period. Pulmonary tuberculosis, hyperemesis gravidarum, and pyelitis, including pyelonephritis, have definitely decreased as conditions warranting therapeutic abortion. Cardiac disease not associated with cardiac failure has never been an important indication for the termination of pregnancy. All of the other indications, with the possible exception of bronchiectasis, extreme nervous instability, and multiple sclerosis, fulfilled the definition for therapeutic

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* From the Department of Obstetrics, School of Medicine, University of Maryland, and University Hospital.

† Received for publication November 8, 1945.

abortion. It is interesting to note that not a single therapeutic abortion was performed on eugenic, social or economic grounds, although many sterilizations were done for these latter indications.

The method of performing a therapeutic abortion, namely by the vaginal or abdominal route, is of some interest. Many writers believe that when a pregnancy has advanced beyond the sixteenth week the abdominal route should be employed, whereas those under sixteen weeks may be interrupted by the vaginal route. Table II shows that fifty-one vaginal and twenty-nine abdominal interruptions were done. In the group under sixteen weeks' gestation, twenty-three were interrupted by the vaginal route and twenty-two by abdominal hysterotomy; fifteen of the latter group were sterilized at the same time. The remaining seven abdominal hysterotomies, which were not sterilized, consisted of four cases of premature separation of the normally implanted placenta, two of fulminating preeclampsia, and one of placenta previa. In this same table it will be seen that parity did not influence the route chosen for the interruption of pregnancy, since nineteen primigravida and thirty-two multigravida pregnancies were interrupted by the vaginal route, whereas six primipara and twenty-three multipara pregnancies were interrupted by the abdominal route. It appears that choice of the ab-

TABLE I

Indications and Method of Interrupting Pregnancy

INDICATIONS	1924 TO 1932		1933 TO 1939		1940 TO 1943	
	Per Vagina	Hysterotomy	Per Vagina	Hysterotomy	Per Vagina	Hysterotomy
Hypertensive vascular disease, hypertensive vascular renal disease, and nephritis	5	0	7	13	3	2
Tuberculosis, pulmonary	4	0	1	1	0	0
Hyperemesis	11	0	6	1	0	0
Pyelitis and pyelonephritis	2	0	1	0	0	0
Cardiac disease	1	0	0	1	0	0
Placenta previa	2	0	1	1	1	1
Acute hydramnios	1	0	1	0	1	0
Premature separation of placenta	0	0	1	0	0	4
Bronchiectasis	0	0	0	1	0	0
Nervous instability	0	0	1	0	0	0
Antepartum eclampsia	0	0	0	0	2	0
Fulminating preeclampsia	0	0	0	0	0	2
Multiple sclerosis	0	0	0	0	0	1
Total	26	0	19	18	7	10

dominal route for the interruption of pregnancy was influenced by the indication of chronic and acute toxemias, premature separation of the placenta, placenta previa, and by the desirability of sterilizing the patient at the same time.

TABLE II

WEEKS OF PREGNANCY	GRAVIDA		PER VAGINA	STERILIZED	GRAVIDA		HYSTEROTOMY	STERILIZED
	Prim.	Multi.			Prim.	Multi.		
Under 16 weeks.....	10	13	23	1	0	7	7	7*
Over 16 weeks......	9	19	28	2	6	16	22	51*
Total............	19	32	51	3	6	23	29	22*

* 22 Sterilizations in 29 hysterotomies.

TABLE III

Mortality Rate

YEAR	NUMBER	PER VAGINA	HYSTEROTOMY	REMARKS
1926	1	1	0	Hyperemesis and cardiac failure
1929	1	1	0	Hyperemesis
1931	1	1	0	Hyperemesis
1935	1	0	1	Hyperemesis: two previous cesarean sections

TABLE IV

Procedures Employed in Terminating Pregnancy

Amniotomy	14
Medical induction and amniotomy	4
Amniotomy and crushing of fetus	8
Amniotomy and scalp clamp	1
Amniotomy, bougie and cervical pack	1
Amniotomy and cervical pack	4
Amniotomy, cervical pack, and scalp clamp	1
Amniotomy, internal version, and breech extraction	1
Dilatation and curettage	10
Bougie and cervical pack	1
Cervical pack	3
Bougie	1
Medical induction	2
Hysterotomy	28

Morbidity and mortality are important considerations in evaluating the method of interrupting pregnancy. The morbidity rate has been high for both methods, 35.5 per cent by the vaginal route and 27.5 per cent by the abdominal route. Four maternal deaths resulted, as shown in Table III. These deaths took place in cases of hyperemesis gravidarum between 1926 and 1935. All were patients sent into the clinic, generally in poor condition, prior to the more modern method of treating this complication. One of these pregnancies was interrupted by the abdominal route because the patient had two previous cesarean sections.

The various methods employed in the actual production of the therapeutic abortion are listed in Table IV and show a wide choice of procedures, with amniotomy being the most frequent course followed. The complications encountered were rather few. They consisted of two cases of psychosis, one abscess of the thigh, one instance of postoperative shock, and one infection of the upper part of the respiratory tract.

DISCUSSION

In reviewing some of the recent literature on therapeutic abortion it has been noted that the indications may be broad and they do not always conform with the definition of therapeutic abortion as accepted in this paper. Thus Mayer included such indications as mental deficiency, epilepsy, Graves' disease, diabetes, ulcerative colitis, asthma, Hodgkin's disease, glaucoma, arthritis, and spinal cord tumor; others included recent childbirth, multiparity, polyneuritis, and other social and economic reasons. It is questionable whether the interruption of pregnancy associated with these conditions in any way saves or prolongs the life of the mother. Of course, heredity and social and economic conditions may be helped by therapeutic abortion; however, this leaves open a wide field that may be abused too easily unless some adequate control is established and maintained.

From a study of the cases cited in this paper it has been found that the accepted indications for therapeutic abortion have been decreasing. Pulmonary tuberculosis, for example, as an indication for therapeutic abortion has definitely decreased. The authors have not interrupted a single pregnancy because of tuberculosis since 1939, despite the fact that prior to that date an average of 3.3 patients seen each year had this disease. Since 1939 this average has increased to 13.5 patients a year. Prior to 1938 there was a high incidence of therapeutic abortion because of hyperemesis gravidarum; since 1938, however, not a single case has been interrupted on this account. Yet here again an average of seven cases a year was seen prior to 1938 and nineteen cases a year since that date. Pyelitis and pyelonephritis have not been indications for therapeutic abortion since 1934. Before that time an average of 11.5 patients was observed with this condition; since 1934 the average has been 22.5 patients a year. Cardiac disease, except for early cardiac failure, has never been a frequent indication for the interruption of pregnancy and there has been no therapeutic abortion here for this reason since 1933. However, the average was 8.33 cardiac patients yearly prior to 1933; since that date the average has been twenty-six cases a year. These figures emphasize the fact that much has been learned with regard to the better treatment of these various complications and that therapeutic abortion no longer is the complete solution for these problems.

Likewise, it has been found that certain indications still continue to be detrimental to the health and life of the patient when associated with pregnancy. These are principally of a toxemic nature and include all hypertensive conditions, with and without vascular and renal disease. A number of acute conditions, such as premature separation of the placenta, placenta previa, acute hydramnios, and fulminating preeclampsia also continue to remain important indications for therapeutic abortion.

Another important finding from this study is the route to be employed for the interruption of pregnancy. Neither the duration of pregnancy nor the gravidity determined whether the patient should be interrupted by the vaginal route or the abdominal route, but rather whether the complication justified sterilization of the patient and the need for immediate emptying of the uterus, as in cases of premature separation of the normally implanted placenta, fulminating preeclampsia, and placenta previa.

CONCLUSIONS

1. Eighty cases of therapeutic abortion are analyzed.
2. Therapeutic abortions are done on strict indications in order to save or prolong the life of the mother.
3. Pulmonary tuberculosis, hyperemesis gravidarum, pyelitis and pyelonephritis, and cardiac disease, as a result of better understanding and treatment of these diseases, are decreasing as indications for therapeutic abortion.
4. The chronic and the severe acute toxemias of pregnancy remain important indications for the interruption of early pregnancy.
5. The choice of the vaginal or abdominal route for the termination of early pregnancy should depend upon the indication and whether or not sterilization of the patient is desirable, and upon those conditions which require prompt emptying of the uterus.
6. The morbidity is greater in those cases terminated by the vaginal route, but not significantly higher than those interrupted by the abdominal route.

A CASE OF RUPTURE OF THE AORTA INTO THE THIRD PART OF THE DUODENUM*†‡

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The entity of a ruptured aorta has a long and classical history in the archives of pathologic anatomy. When this condition is mentioned the majority of physicians visualize the syphilitic or atherosclerotic aneurysm. Doehle (6), Heller (13), Benda (1), and Chiari (4) have contributed much distinguished work on the subject of aneurysms. It has been estimated that 10 per cent of all aneurysms rupture, hence the relative frequency of ruptured aorta with aneurysm for a basis.

Before presenting and discussing the case to be reported it is advisable to review briefly the etiology of aortic rupture. All such cases can be classified under two general headings, extrinsic and intrinsic.

The extrinsic causes usually are self evident and in most instances require no detailed investigation. They are:

1. Syphilis of the aorta.
2. Vermicular infestations.
3. Trauma.
4. Mycosis.
5. Erosion by tuberculosis or pyogenic infection.

The intrinsic causes, however, present a problem which has been most confusing and still remains so. It will be noted that the author has not used the term "spontaneous rupture." This expression implies that the vessel apparently has burst without precipitating and predisposing factors. Rokitansky (25) and Oppenheimer (21) have reported cases of spontaneous rupture in children eight and nine years of age respectively. Klotz and Simpson (14) in 1932 and Sailer (27) in 1942, after exhaustive research and study of their several cases, arrived at the conclusion that spontaneous rupture without some predisposing factor does not occur. .It is the belief of Klotz and Simpson that the laboratory methods used to demonstrate elastic fibers, muscle fibers, and lesions of the vasa vasorum in the cases of reported spontaneous rupture could be improved. Furthermore, it is rather obvious that in the area through which the rupture occurs there is little remaining evidence of the original structure, hence the difficulty of studying the tissue.

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Klotz and Simpson (14) and Sailer (27) have shown that in all of their cases of so-called spontaneous rupture of the aorta there has been present an underlying process of a peculiar noninflammatory degeneration of the media caused by a variety of factors. These same lesions were found to accompany the development of dissecting aneurysms. In most cases the lesions consisted of patchy diffuse necrosis in the area between the middle and outer thirds of the aorta. There was no inflammatory reaction. Some investigators have referred to these areas as cystic degeneration of the media. Authorities agree, however, that syphilis apparently plays no part in the process.

The following case is reported because it is considered to be worthy of note both from a surgical and medical diagnostic standpoint.

CASE REPORT

Case No. 90,705, Autopsy No. 11,366: A 50 year old colored male was admitted to the Baltimore City Hospitals on November 16, 1944 with the complaint of "pain in the lower back which spreads all over the stomach."

The past history revealed that at the age of twelve years an operation was performed for "boils" in the inguinal region. The patient had gonorrhea several times, but aside from this his past history was noncontributory. The mother and father had died at an advanced age. There was no family history of any hereditary, degenerative or infectious disease.

The patient reported that he was in good health until three weeks prior to admission. His symptoms first began with the gradual onset of increasing weakness and drowsiness. He continued to work with these symptoms but was forced to rest part of the time.

Two weeks before being admitted he had a sudden onset of pain in the lower part of his back. This was extremely sharp and severe in character, spreading rapidly until it involved the entire abdomen. The duration of the attack was fifteen minutes and was accompanied by nausea, vomiting, and profuse perspiration. After this he suffered from two to eight similar attacks daily and found it necessary to remain in bed because of the pain and increasing weakness. There was no dull aching pain between the severe stabbing attacks, which were always associated with considerable nausea, vomiting, and a sensation of fulness in the abdomen. There were no symptoms referable to the heart. During the time that he suffered these attacks he consulted two physicians who made complete physical examinations and then prescribed "electrical treatments."

Two days before admission he had severe attacks of hiccups which sometimes ceased when he drank water. During the last week there was almost complete anorexia. For the period of two weeks the stools were dark in color.

A physical examination revealed an acutely ill patient who appeared to be extremely uncomfortable. His temperature was 101 F., the pulse rate was 100, and respirations were 28 per minute. The blood pressure was 200 mm. of mercury systolic and 140 mm. diastolic. He was well developed and showed slight evidence of weight loss. The skin and mucous membranes were dry but of good color. The pupils reacted to light; the eye grounds showed slight arteriolar narrowing, with some venous compression; no hemorrhage or exudate was seen. The ears, nose, and mouth were normal. The trachea was in the midline; there was no venous congestion or enlargement of the thyroid gland. The neck was not stiff. No tenderness was found along the spinal column. Reaction to

Kernig's sign was negative. The lungs were clear. The heart was not enlarged; the sounds were clear, with a soft systolic murmur in the aortic area; no diastolic murmurs were heard. The abdomen was rather rigid but there were no localized areas of tenderness. The genitalia were negative. Upon rectal examination the prostate gland was found to be normal. The extremities showed no edema or lesions; the reflexes were normal.

Laboratory findings: Examination of the blood at the time of admission showed hemoglobin 12 grams. The white blood cell count was 12,850, with a predominance of polymorphonuclear cells. Urinalysis revealed a specific gravity of 1.025 acid in reaction and was negative for albumin and sugar. No casts, red or white cells were found. The stool obtained on November 17 was dark brownish black and of soft consistency; guaiac was 4 plus. The serologic test for syphilis was positive. The nonprotein nitrogen level was 40 mg.%.

Course in hospital: At 5:15 P.M. on November 17, his second day in the hospital, the patient had one of his typical attacks of nausea, vomiting, and perspiration. The vomitus was green and watery. The next day the vomiting and nausea were increased greatly. Hiccuping became pronounced and could not be relieved in spite of medication. Lead poisoning was suspected but no stippling cells could be found. He received slight relief upon the intravenous injection of calcium gluconate. When the acute attacks increased in frequency morphine sulfate was administered but did not relieve the pain. The pulse and respiratory rates continued to increase although the temperature became normal. Late on November 19 the vomiting of greenish material became incessant and an intestinal obstruction was suspected.

Early on November 20 the patient began to vomit reddish brown watery material. Respirations became labored and rapid. All attempts at stimulation failed and he expired four days after admission.

The clinical impression was that of hypertensive cardiovascular disease with possible intestinal obstruction.

Autopsy findings: The external appearance of the body was that of a well developed colored male approximately 50 years of age. Its length was approximately 70 inches and the weight about 170 pounds. There was no evidence of any abrasions or violence on the limbs or body. Some old scars of ecthyma were present on the legs, but there was no evidence of edema or infection. All body orifices were normal and without discharge. The face showed no signs of weakness; the pupils were round and equal. There were no scars or decubitous ulcers.

Upon internal examination the pectoral musculature of the thorax was found to be extremely thick. There was no fluid seen in either pleural space. The mediastinum had not shifted. The lower and middle lobes of the right lung were held with extensive well formed adhesions against the dome of the diaphragm and the right parietal pleural surface. Elsewhere the pleura was smooth and glistening. The pericardium was thin, glistening, and entirely free, and contained the usual amount of fluid.

In the abdominal cavity an extensive amount of gas was found in the intestinal tract. The lower parts of the small and large intestines were blood stained and appeared to contain clotted blood. There was no evidence of peritonitis. The peritoneum was smooth and glistening. All organs seemed to be in normal position but the liver was slightly enlarged. A preliminary examination of the intestinal tract revealed no evidence of ulcers or tumors throughout its entire extent. At the region of the third part of the duodenum, where the ligament of Treitz is especially well formed, a mass was felt. After careful dissection the aorta and duodenum were found to be adherent and there was a large blood clot here (Fig. 2). The possibility of a dissecting aneurysm or hemorrhage into the adrenal gland was considered, therefore the intestines were left intact. The aorta was explored at its bifurcation into the ilium. In order to maintain the relationship between the intestinal tract and the aorta these organs were stripped in their entirety from the vertebrae so that no relationship was disturbed. It was then possible to divide the aorta posteriorly and ascertain the source of the blood in the intestine and its method of entrance. The fluid content of the abdomen was normal.

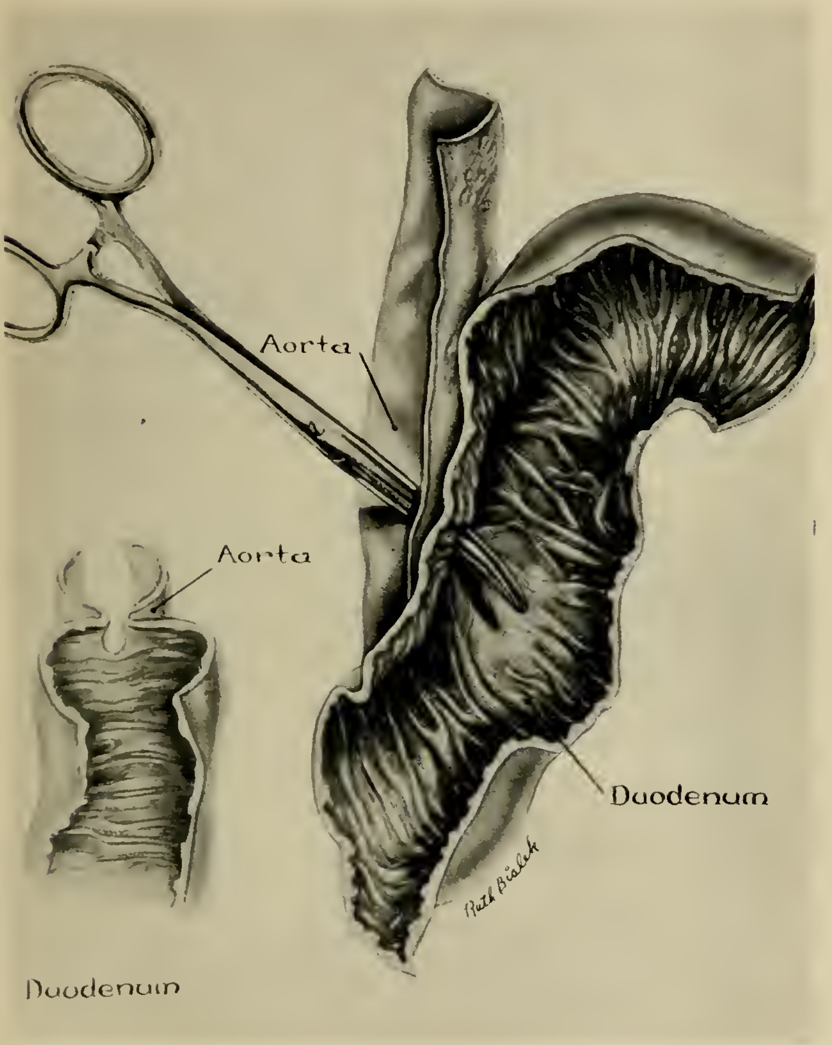


FIG. 1. Artist's conception of the perforation joining the duodenum and aorta done shortly after autopsy.

The heart weighed 560 grams. Its measurements were: tricuspid valve 12 cm.; pulmonary valve 8 cm.; mitral valve 9.25 cm.; aortic valve 7.5 cm.; wall of the left ventricle 2.9 cm., of the right ventricle 1.1 cm.

The heart was enlarged greatly on the left and right sides. When held in the hand it was firm, especially the left ventricle. The epicardium was smooth and glistening and contained a normal amount of pericardial fluid. All of the great vessels were free as they entered and left the heart. There was no evidence of pericarditis. The right side of the heart was filled with a postmortem clot but contained no mural thrombus. The left ventricle was concentrically enlarged and firm. The valves showed no lesions. The coronary arteries were the site of extensive sclerosis; however, no definite old or new occlusions could be found. There was no evidence of rheumatic or syphilitic involvement.

The aorta was split posteriorly in its entire extent and was inelastic and slightly tortuous throughout. The intima everywhere showed diffuse fatty changes. There were many atheromatous ulcers. In some areas there were stellate lesions which appeared to be syphilitic. Approximately 1.75 cm. below the renal arteries, exactly in the center of the aorta on its anterior surface, there was a lesion measuring 9 mm. in diameter. Its edges were irregular and it resembled an atheromatous ulcer or plaque. The center was filled with soft clotted blood. A probe introduced to a depth of 1 cm. passed freely and met no apparent resistance. The gastrointestinal tract was then slit from the cardiac end down past the cecum. The distal part of the intestine was filled with clotted blood. At the region of the lesion of the aorta the duodenum was extensively and firmly bound to the vessel. Approximately 1.5 cm. distal to the junction of the horizontal and ascending portions of the third part of the duodenum on the posterior surface of the duodenum there was a triangular tear in the mucosa (Fig. 3). This rent was surrounded by fresh clotted blood which was washed away easily. A small fine curved probe was inserted into the ruptured plaque of the aorta and practically guided itself through the vessel into the wall of the duodenum, making its exit through the torn mucosa. At this point the duodenum and aorta were bound together firmly by the well formed ligament of Treitz. There was a rather extensive blood clot between the adventitia of the aorta and the outer wall of the duodenum. It was evident that the aorta had ruptured through the aortic plaque. Because the duodenum was bound so firmly to the vessel the current of blood followed the path of least resistance and made its way through the walls of the duodenum to erupt and provide the terminal fatal hemorrhage.

The weight of the right lung was 650 grams, the left 625 grams. Dense adhesions were present in the lower lobe of the right lung. Both lungs showed moderate emphysema and the lower lobes were congested and edematous. Diffuse lobular pneumonia was seen in the lungs. The bronchi contained some edematous fluid. There was no evidence of tuberculosis or emboli.

The liver weighed 2425 grams and was large and firm. Its cut surface showed indistinct lobulation and moderate chronic passive congestion. The bile ducts and vessels appeared to be normal. The gallbladder emptied easily into the duodenum.

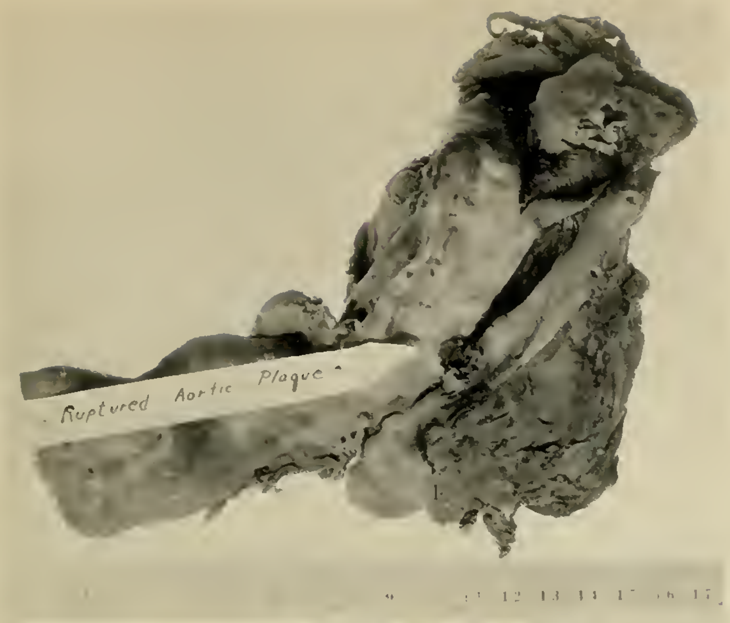
The spleen weighed 200 grams and was slightly enlarged and firm. The capsule was wrinkled and slightly thickened. Its cut surface was flat, dark red, and of normal appearance. The malpighian bodies were indistinct.

Each adrenal gland weighed 40 grams. The cortices were of ample width and contained abundant yellow lipoid.

The weight of the pancreas was 200 grams. It was firm and well lobulated, with no evidence of fat necrosis. The splenic artery was definitely sclerotic throughout.

The entire gastrointestinal tract was distended. The stomach was large and showed some postmortem digestion. The gastric rugae were developed poorly. There was no

Fig. 2



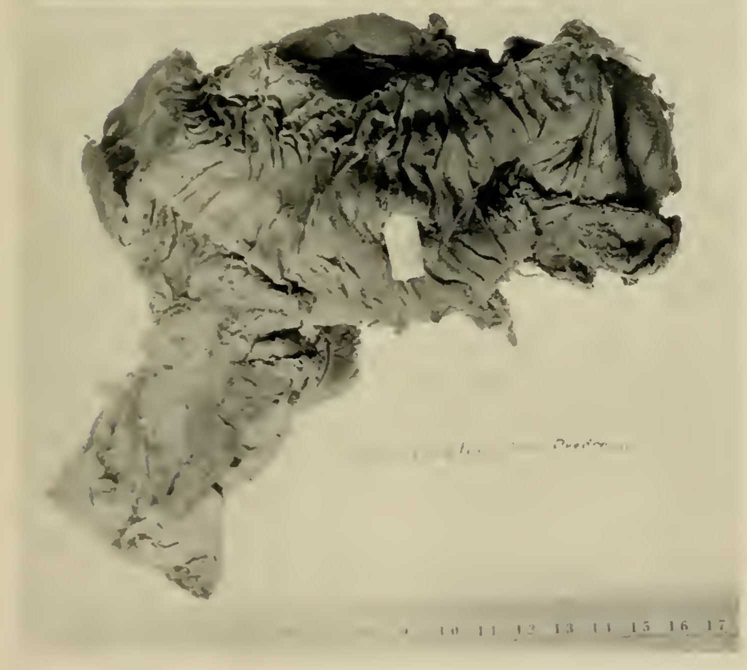


Fig. 3

Fig. 2. The arrow points to the ruptured aortic plaque. The aorta has been slit longitudinally to make certain that this was not a dissecting aneurysm.

Fig. 3. A piece of chalk has been inserted into the rent in the duodenum. The outer wall of the aorta and its dense attachment to the duodenum can be seen in the lower part of the illustration. These views were obtained by simply turning over the specimen.

evidence of acute, chronic or healed peptic ulcers. At the site where the rupture occurred into the third part of the duodenum there was no evidence of an ulcer or a foreign body. No foreign bodies were found in the intestinal tract. The mucosa in the area of the rupture appeared thinned but there was no sign of inflammation. The entire tract distal to the site of the rent contained blood. The large intestine was distended with old clotted blood.

The kidneys weighed 210 grams each. The capsules were slightly thickened but stripped readily. When the capsules were removed the surface of the cortex was smooth. There was no nodularity or evidence of narrowing of the cortices. The medulla appeared to be normal. There was no evidence of calculi, tumors or pyelonephritis. The renal arteries were thick walled but entirely patent. The ureters were narrow, delicate, and not constricted. The bladder was slightly distended and the mucosa showed some thickening. The prostate gland appeared to be normal. The seminal vesicles, testes, and epididymes were within normal limits.

The brain was not obtained for autopsy.

Histopathology: The sectioning showed the wasted heart muscle which had been replaced by fibrous tissue. In some areas the fibrous replacement was rather extensive, whereas in others it was just beginning. The coronary arteries were sclerotic, but no thrombus or occlusion could be found.

The majority of the renal tubules and glomeruli were normal. In some areas the glomeruli were fibrosed and the tubules were replaced by fibrous tissue. A number of the arterioles showed subendothelial thickening at the junction with the glomeruli and these accounted for the occlusion.

In the lungs were patchy areas of lobular pneumonia, edema, and heart failure cells.

Many sections of the aorta showed only typical atherosclerosis. There was no cystic noninflammatory medial degeneration. The adventitia and vasa vasorum were not unusual. Sections made directly through the area of rupture revealed that the three walls of the vessel were intact. There was no evidence of dissecting aneurysm. The center of the lesion showed a complete rupture of the three walls with a large amount of clotted blood.

DISCUSSION

Before entering into a discussion of the case reported here, a brief review of the anatomic relationship of the third part of the duodenum to the aorta should be made. The third or inferior portion of the duodenum may be subdivided into a horizontal and an ascending portion. Around this ascending portion a variable number of peritoneal folds and pockets are found. The strength, position, and arrangement of these folds bear importance as far as the variance of relationships is concerned, and also as a site of internal hernia.

Just to the left of the ascending part of the duodenum two peritoneal folds leave the wall of the duodenum and pass to the posterior abdominal wall; these two folds constitute the superior and inferior duodenal folds. The folds, depending upon their relationship to the ascending duodenum and the posterior parietal peritoneum, form various fossae. The ligament or muscle of Treitz, which is known as the suspensory ligament of the duodenum by modern anatomists, is a fibromuscular band that supports the third portion of the duodenum to a variable extent. It takes its origin from the lumbar part of the diaphragm adjacent to the aortic hiatus and passes downward to the left of the celiac artery and behind the pancreas. The fibers of the ligament of Treitz are inserted into the third portion of the duodenum.

Dependent upon the strength and site of insertion of these two duodenal folds and the suspensory ligament rest the relationships of the third part of the duodenum to the aorta. In the case at hand the ligament of Treitz was especially well formed and was inserted into the anterior wall of almost the entire ascending portion of the third part of the duodenum. The duodenum was bound so firmly to the aorta that months after the post mortem the two members were still densely adherent.

Since the time of this autopsy the writer has made routine dissections in 125 cases. None of the subsequent examinations showed as firm an attachment of the aorta and duodenum. The variance has been extraordinary; however, some instances have approximated the case herein described, whereas others have shown practically no well defined attachment. It can be readily understood that if an aorta were to rupture in these cases there would be little likelihood of a rupture into the duodenum. It is more probable that in such instances there would be diffuse hemorrhage retroperitoneally.

In the case presented all of the extrinsic causes of rupture can be eliminated. Many microscopic sections of the aorta failed to reveal any evidence of a dissecting aneurysm. No areas of inflammatory or noninflammatory degeneration of the media could be found. If any cystic or noninflammatory degeneration of the media had been present the original structure was destroyed at the time of rupture.

Relation of symptoms to lesions: The symptoms were first seen about three weeks prior to the death of the patient. It seems possible that the rupture occurred slowly. The duodenum and aorta were so firmly adherent that some force was necessary to cause a rupture. It will be noted that the radiation of pain is described as being in the back and over the entire abdomen. Recurrent attacks of sharp pain, nausea, vomiting, and profuse perspiration were undoubtedly precipitated by an increase in the rupture each time. Hiccuping, which was a predominant symptom, probably occurred as a result of reflex irritation of the diaphragm.

No great amount of blood was found in the stool because as soon as the rupture was complete the patient died almost immediately. The persistent vomiting was caused by irritation of the celiac nerve plexus.

The distended abdomen, with lack of any definite area of tenderness, was a state of paralytic ileus resulting from irritation of the autonomic nervous system.

SUMMARY

1. A case of rupture of the aorta into the third part of the duodenum is presented. No case of rupture into the duodenum has been reported previously.
2. A brief review of aortic rupture is given.
3. An attempt is made to correlate the symptoms with the lesions.

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OSTEOID-OSTEOMA ASSOCIATED WITH MYOSITIS OSSIFICANS*†

A Case Report

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In 1935 Jaffe (1) described a benign slow growing osteogenic tumor which he named osteoid-osteoma. Since then this condition has been reviewed by him and Lichtenstein (2) after studying thirty-three cases. Because of the unusual character and association of the symptoms and signs, it is worth while recording proved cases with the peculiarities of each, as Stauffer (4), Lewis (3), and others have done.

The tibia and femur seem to be the bones which are most commonly involved. Usually the age incidence is between ten and twenty-five years, with males being predominantly affected.

The symptoms most frequently recorded, which may or may not be antedated by trauma, are: pain, stiffness, weakness, and limping. The principal complaint is pain which usually is intermittent at the onset, possibly occurring at night and causing insomnia, later becoming constant both day and night. The character of pain, mild at the beginning, subsequently develops into one which is agonizing, aching, and twitching. A proper diagnosis may be established ultimately if the following important signs are considered: local swelling in the absence of heat or redness, atrophy, tenderness and limping.

With the exception of the roentgenographic studies, clinical laboratory findings are not contributory to diagnosis. Osteoid-osteoma, a radiolucent area, in spongy bone is commonly round, whereas it is oval shaped in the cortex of long bone. A sclerotic perifocal reaction may be seen for a varying distance but the central diameter runs usually about I cm. This lesion must be remembered whenever chronic localized osteomyelitis or bone abscess is being considered.

The pathologic aspects on gross examination reveal a hollowed area surrounded by thickened, rough, brittle sclerotic bone. Microscopically there is found first a proliferation only of osteoblasts; later, however, much intercellular substance develops which slowly becomes calcified, so that the lesion contains large patches of osteoid tissue. There is first a cellular phase followed by an osteoid stage later developing into a mature stage of calcified atypical bone.

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† Received for publication November 12, 1945.

It is the purpose of the writers in this report to present a case of osteoid-osteoma in the proximal portion of the femur associated with myositis ossificans in the adjacent psoas muscle.

CASE REPORT

B. A. a white male, age eighteen, was well developed and athletic. His chief complaint was spasmodic pain in the right knee beginning in October, 1943, two weeks after sustaining a kick on its lateral side. Little attention was paid to this since there was no induration, swelling, ecchymosis, or interference of motion. An aching pain recurred frequently, changing gradually from a localized condition to one of reference along the distribution of the sciatic nerve. These attacks continued to the extent that he had to dispense with all athletic activities. Later insomnia and much limping from pain developed, with considerable atrophy.

Several physicians, including an orthopedic and a neurologic surgeon, examined the patient without finding an explanation of the trouble. The same symptoms persisted with an increasing amount of atrophy in the involved extremity. In November, 1944 the patient was examined by one of the writers, A. F. V., and the possibility of an osteoid-osteoma was suspected, especially after comparison of new and old roentgenographs.

The physical examination revealed a tall, thin young adult who walked with a slight limp on the affected side. The right leg showed three-fourths inch of atrophy as compared with the left. There was no evidence of swelling or induration in the region of pain. However, on deep palpation the patient complained of tenderness over the hip joint anteriorly. All movement of this joint was normal, with the exception of slight limitation of internal rotation. The knee joint was found to be normal, with no changes in sensation; the reflexes were active and equal. Negative results were obtained on examining the spine, sacro-iliac joint, and pelvis. There was a slight amount of atrophy in the right gluteal muscle group.

Stereoscopic roentgenograms of the right hip region revealed a rarefied, circumscribed area, 1 cm. in diameter, at the lower margin of the intertrochanteric line anterior to the lesser trochanter. There was periosteal thickening of the cortex, with a perifocal zone of densification in the neighboring bone surrounding the lesion. Preoperatively the area of increased density was not recorded in the region of the lesser trochanter; this later proved to be a separate process of myositis ossificans in the adjacent psoas muscle (Fig. 1 and 2). The blood and urine studies were negative.

Along with the clinical and roentgenographic findings a diagnosis of osteoid-osteoma was concluded. Surgery was advised and was performed on January 3, 1945.

Under general anesthesia an anterior longitudinal incision, slightly curving along the crest of the ilium, was made. Further careful dissection and retraction brought the anterior inner surface of the femur into view. The extension of the capsular and iliofemoral ligament was incised at the level of the base of the lesser trochanter and retracted longitudinally, which gave a clear view of the lesser trochanter and its relation to the femoral shaft. Beneath this ligamentous tissue there was a small amount of soft pinkish colored mucogelatinous material somewhat simulating tumor tissue or degenerated granulation and measuring 1 cm. in diameter. This was removed for pathologic study.

Extending along the anterior surface of the psoas muscle one-half inch inward to the medial border of the femur and anterior to the lesser trochanter was a separate piece of bone one-half inch in diameter which was attached to the psoas tendon at its base and was movable. It was believed that this process simulated myositis ossificans and it was removed in its entirety from the surrounding tissues.

The shaft of the femur about the base of the lesser trochanter for a distance of three-fourths of an inch was found thickened and rough, even brittle in character. In the center

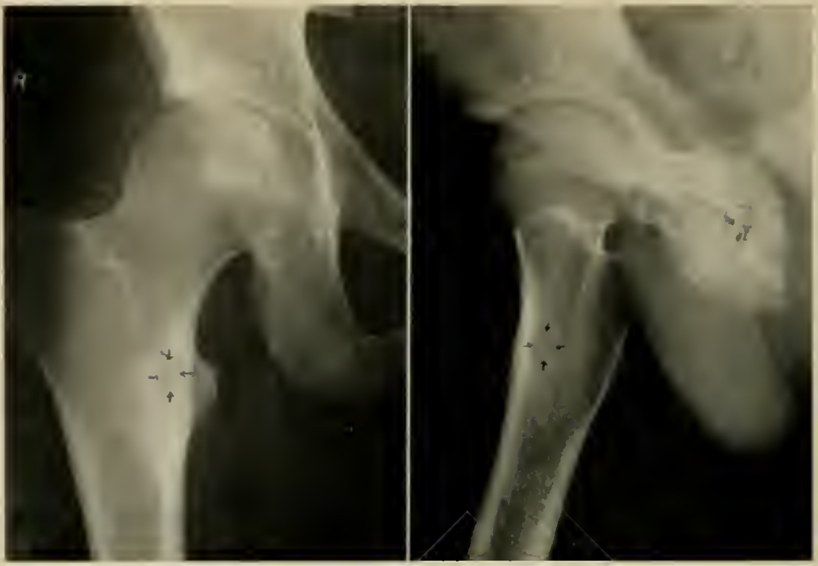

Fig. 1 Fig. 2

Fig. 1 and 2. Roentgenograms showing the osteoid-osteoma at the lower margin of the intertrochanteric line. The nidus is clearly visible with extensive perifocal reaction. The area of increased density overlying the lesser trochanter, which proved to be myositis ossificans of the adjacent psoas muscle, can be seen.

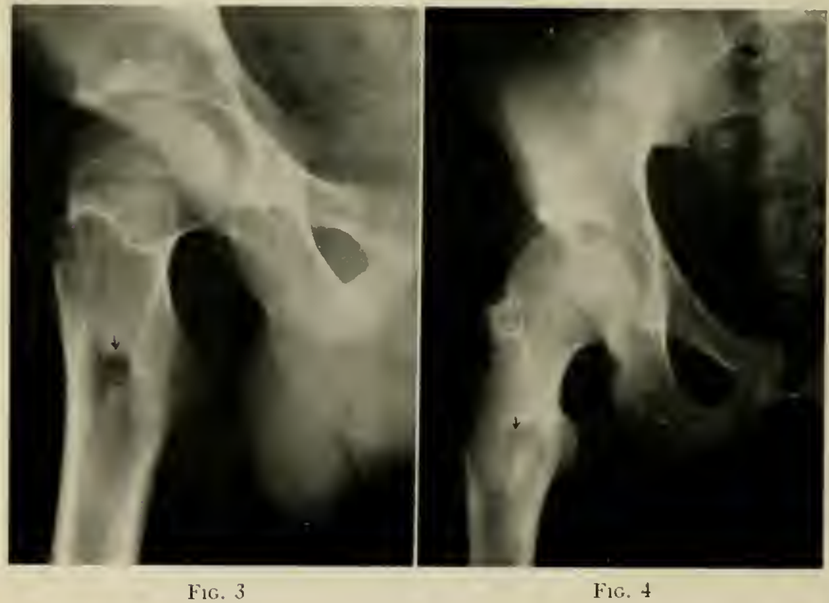

Fig. 3 Fig. 4

Fig. 3 and 4. Postoperative roentgenograms showing area of resection in the proximal femur where the osteoid-osteoma was located and disappearance of increased density over the lesser trochanter.

of this was located the nidus, which measured approximately 1 cm. in diameter. With a chisel, resection of the bone cortex was carried out for approximately 1½ cm. in width and length. The bone marrow cavity seemed normal at both ends, but even so this was curetted thoroughly. The diseased piece of bone that was removed was unaffected on the under surface or that portion next to the marrow cavity, the main involvement being in the superficial layers beneath the periosteum. A culture of the area was made which later was reported to be negative for bacterial growth. The wound was closed without drainage and it healed by primary intention. Within forty-eight hours after operation all symptoms had subsided.

Pathologically the characteristic gross and microscopic findings confirmed the diagnosis of the two pieces of bone, namely, osteoid-osteoma and myositis ossificans. Soft tissue sections revealed, chiefly, loose fibrous tissue in which were focal areas of lymphocytic infiltration along with interstitial hemorrhage, with no resemblance of tumor tissue being present.

Postoperative roentgenographs showed the disappearance of the increased density anterior to the lesser trochanter, which proved to be myositis ossificans, and the area where the lesion was resected from the proximal portion of the femur (Fig. 3 and 4).

Hospitalization after the operation was uneventful and since his discharge the patient has been absolutely asymptomatic, with the return of full function and partial disappearance of the atrophy.

COMMENT

Unless the surgeon is constantly mindful of the symptomatology and findings of this condition the correct diagnosis may be easily overlooked. Stressing of the type and character of pain in the absence of swelling, induration, and other symptoms is particularly significant. Atrophy is another outstanding clinical feature which may be the result of that process connected with bone and joint diseases, atrophy of disuse from discomfort, or a synergistic sympathetic phenomenon.

It is difficult to account in this case for the mucogelatinous material found beneath the ligamentous tissue anterior to the lesser trochanter. It may be caused by (1) a purely physiologic irritative reaction of the muscle from the diseased process of the bone, or (2) it may be related to the lesion.

SUMMARY

A case report of osteoid-osteoma of the proximal portion of the femur is presented with an associated myositis ossificans in the adjacent psoas muscle.

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AN OBSTETRIC CASE REPORT*†

The patient, a twenty-nine year old woman who has had four normal pregnancies and labors, is now pregnant for the fifth time. Her course has been without incident until the thirty-sixth week, when word was received that she has just passed about a cupful of bright red blood. There was no pain accompanying this bleeding and it had ceased when the call was made. What should be the further conduct of this case?

DISCUSSION

The original dictum that "painless bleeding in the last trimester of pregnancy must be considered to be placenta previa until proven otherwise" still holds true. This patient must be transferred to a hospital immediately. Under no conditions should a vaginal or a rectal examination be done, nor should the vagina be packed, even though bleeding may have begun again. Upon admission to the hospital, she should first be typed and crossmatched for transfusion and blood should be available before any attempt is made to complete the diagnosis or institute treatment. If the patient is not bleeding a roentgenographic examination can be made in an effort to establish the diagnosis of placenta previa. At the present stage of its development, the roentgenogram can be said to be of presumptive value only, and is not positive.

The operating room should be prepared for either abdominal or vaginal delivery and all necessary attendants should be in readiness. When these preparations have been completed, the patient should be examined vaginally. First, the cervix should be exposed by means of a speculum and inspected for erosion, the amount of obliteration of the canal, and dilation of the external os. Then a *gentle* digital examination is done. If placental tissue can be palpated, the patient should be delivered by that method which is most feasible and least dangerous. In dealing with a placenta previa centralis, cesarean section is generally agreed to give the best results; however, in the marginal and lateral types, delivery through the vagina is safe for both the mother and child.

To allow this patient to remain at home without treatment or to attempt to treat her at home is so reprehensible as to be almost a criminal procedure.

Actual treatment: Unfortunately, the physician first called in this case told the patient to remain at home, and that he would "watch her." For what he did not say; it may have been for a fatal hemorrhage. Two days later she bled again, somewhat more than the first time. The doctor then visited the patient and examined her rectally "to make a diagnosis." Following this, she began to bleed severely and was rushed to the hospital. Upon arrival, she was exsanguinated and in profound shock. Despite heroic treatment the mother died about one hour after admission. There was no attempt at delivery.

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* From the Department of Obstetrics, School of Medicine, University of Maryland.

† Received for publication November 20, 1945.

A REPORT ON A PROPOSED PLAN FOR GRADUATE STUDY AT THE SCHOOL OF MEDICINE, UNIVERSITY OF MARYLAND*

By the Postwar Planning Committee

GEORGE CARROLL LOCKARD, *Chairman;* HOWARD M. BUBERT, and DIETRICH C. SMITH, *Secretary*

In the very near future the School of Medicine will be called upon to offer courses reviewing the recent advances in the field of medicine and its various specialties for those physicians of the state who are returning from military service. Paralleling this is a growing demand for continuation courses in the various fields of medicine by practitioners who because of the pressure of professional duties are not able to keep fully abreast of the advances in medicine. As a state university we have a peculiar obligation and duty to these men, and it is the feeling of this Committee that it would be far better to assume this as a voluntary gesture than to yield to the force of outside influence. To this end the Committee offers the following plan to the Faculty Board of the School of Medicine.

CLASSIFICATION OF PHYSICIANS DESIRING TRAINING

Perhaps the most satisfactory approach to this problem is to present an excerpt from the recent report upon the subject in the March (1945) number of the Journal of the Association of American Medical Colleges, page 98. Here is presented a classification of the physicians desiring graduate training of one sort or another, broken down as follows:

"I. Physicians returning from the Armed Forces
  A. Specialists or specialists in training
    1. Withdrawn from practice
    2. Withdrawn upon completion of training but before practice began
    3. Withdrawn from training
    4. Withdrawn after an internship before training could be started
  B. General practitioners
    1. Wishing to resume practice
    2. Wishing to begin practice, having entered the Armed Forces directly from an internship
II. General practitioners who remained at home but were busy carrying on the exacting demands of an expanded practice."

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* This report was accepted by the Faculty Board at a meeting held on October 23, 1945.

To provide for the needs of these men and to establish a foundation for more extended graduate training than has been our custom in the past, the Committee believes that the School should set up two teaching programs organized as follows:

- I. A refresher or continuation program divided into two groups
    - A. A formal series of refresher courses organized along the usual lines of instruction
    - B. An informal program allowing properly qualified men to familiarize themselves with what is going on in the School
- II. A program designed to expand hospital and medical facilities to a point where the number of men accommodated for graduate training can be increased beyond the present number taken by the School. Both of these programs should be directed by a committee appointed by the Dean for the Faculty Board and administered by a permanent head.

I. REFRESHER OR CONTINUATION COURSES

The formal program: This program would be designed primarily for those in categories I-B-1, I-B-2, and II, men who for the most part wished to resume general practice either after a period of military service or who, having stayed at home to serve in some other capacity, felt the need for a brief survey of the recent advances in medicine. Whether any distinction should be drawn on the basis of military service, in respect to admission, is a matter that is best left to the judgment of the Faculty Board Committee in charge of the program. This program should consist of lectures, conferences, and round-table discussions in various phases of medicine and surgery, with as much time as circumstances might permit at the bedside and in the dispensaries. The actual details of organization should be drawn up by the Faculty Board Committee and the administrative head. The Committee, however, makes the following broad suggestions:

a. The program should be divided into three sections: (1) Medicine, (2) Surgery, and (3) Specialties.

b. The program should be arranged so that a man may matriculate for any or all sections in any sequence desired.

c. All sections should be given independently of the regular undergraduate courses and organized with the idea that the participants are graduates in medicine, some of whom have had considerable experience and training.

d. If men returning from military service, by virtue of certain special training and experience so obtained, can participate in the teaching program during the period in which they may be receiving instruction in other fields, full advantage of this should be taken by the School.

e. The Faculty for the most part should consist of regular staff members of the School and Hospital.

f. The School should also give serious consideration to the problem of housing these men in some centrally located dormitory.

The informal program: Although the organization of this program in a sense is simpler than the more formal plan, it offers actually more difficulties since there is more danger of serious conflict with the regular undergraduate teaching. The Committee realizes full well that the very flexibility of this plan is both its greatest asset and its greatest liability. It is not unreasonable to assume, however, that with careful planning after a survey of the facilities of the School that something of value might be worked out. This group would consist of men who for one reason or another were not attracted by the more formal continuation courses and would no doubt consist of men mostly from the categories I-A-1 and I-A-2, men who had finished their specialty training and in some instances had had experience in practice and who would be primarily interested in their particular fields. This group would welcome the opportunity to "browse around" and to talk things over with their colleagues, to be directed to references in recent and current literature, and to pick up information on the latest instruments and methods of treatment by conversing with men familiar with these developments.

For this group particularly, and to a lesser extent for those taking the formal continuation courses, a reception room should be set up either in the hospital, library or one of the medical school buildings. Possibly the Bressler Room on the first floor of the Bressler Building could be used for this purpose. In this room there should be a bulletin board with daily postings of lectures, classes, operations, conferences, seminars, scientific meetings, and other events held in this area and open to these men. The library should develop a special service to aid these men in obtaining the current and recent literature in their respective fields, and should set aside a special reading room for their use.

II. HOSPITAL AND GRADUATE SPECIALTY TRAINING

This program will be designed to take care of those classed in I-A-3 and I-A-4. These men will be interested in completing their training for specialty board examinations. There are about fifteen such boards, differing in degree as to the length of training required but practically all making some allowance for time spent in military service. The principal problem which faces the School in respect to these men is how to give them the necessary training without at the same time jeopardizing or cutting down the opportunities for graduates coming up through the usual medical school channels. Because of the lack of available beds for teaching purposes in this hospital there is a severe strain upon the departmental heads in handling the present schedule for undergraduate students. Surgery has approximately seventy-two beds for major surgery and all its specialties; Medicine, about sixty-eight beds; Obstetrics, thirty-two service beds; Gynecology, sixteen beds; and Pediatrics, thirty-seven beds. It is the impression of this Committee that the heads of these departments are willing to receive into their departments an extra number of men for specialty board training. The real solution of the problem lies, however, in expanding the number of service beds available in the hospital either by increasing the size of the hospital or by increasing the amount of state support so that the number of private beds may be reduced. The Committee, however, feels strongly that every effort should be made to accommodate these men in as great a number as possible.

This can in part be done by creating more fellowships and making greater use of those now available. A fellow could then be appointed for approximately every resident. The resident would do the usual practical work expected of him in the hospital, whereas the fellow would spend most of his time in the laboratories, either doing or assisting in some special research problem, or else working in the dispensary. At the end of a specified time these men would exchange places. In this way the number of men receiving graduate training could be almost doubled. Properly qualified fellows should be encouraged to work for an advanced degree.

THE ADMINISTRATION

The Faculty Board shall authorize the creation of a committee* for the organization and operation of this plan.

The committee shall be responsible for planning courses, developing policies, and for the general direction of the foregoing, under the general supervision of the Faculty Board.

The committee shall consist of a chairman, three preclinical faculty members, six clinical faculty members, and an administrative officer.

The chairman of the committee shall be appointed by the Dean for a term of three years. The other members of the committee shall be appointed as follows: The first year one preclinical member and two clinical members shall be appointed for terms of one year; one preclinical member and two clinical members shall be appointed for a term of two years; one preclinical and two clinical members shall be appointed for a term of three years. Upon the completion of the foregoing terms all appointments will then be made upon a three year basis. All of the foregoing appointments shall be made by the Dean. An administrative officer shall be appointed by the

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* This committee was appointed by Dean Patterson on November 5, 1945, and consists of Drs. Bubert, chairman; Smith, vice-chairman; Sacks, secretary; Uhlenhuth; Wagner, Toulson; Voshell; Reese; Brantigan; and Diehl.

Dean on the advice of the committee in question. The administrative officer shall be an ex officio member of the committee.

DUTIES: *Chairman:* The chairman of the committee shall preside at all committee meetings and shall act as a liaison officer between the committee and the Faculty Board. It shall be his duty to further in every way the purposes for which the committee has been created.

Committee: The committee shall be responsible for formulating all policies in regard to all training with and upon the advice of the Faculty Board. The members of this committee shall make a continuous study of the problem so that the program may be expanded and improved constantly. They shall have a special responsibility for studying the permanent establishment of postgraduate education in the School of Medicine.

Administrative Officer: The administrative officer shall be responsible for effectuating the policies and plans of the committee. He shall prepare teaching schedules, organize courses, arrange for round-table programs, provide living quarters, library service, conference rooms, and other details under the direction of the committee. It is essential that he be supplied with a minimum staff necessary for the carrying out of these duties.

The Postwar Planning Committee urgently recommends that the Committee on Graduate Study consider every possibility for enlarging the number of men the School can accommodate for graduate training. One means of accomplishing this would be by integrating other hospitals throughout the state into the graduate training program. If and when such hospitals become available a schedule could be worked out whereby men would rotate between the various cooperating institutions according to an arranged plan, thus giving all the men an opportunity to enjoy the benefits peculiar to any one hospital. Before assuming responsibility for such training the School of Medicine would undoubtedly wish to exercise some supervision over the instruction of these men. The School, however, would in no way interfere with the administration of these hospitals.

The Committee might also consider urging the adoption of the preceptor system of training as a means of increasing the number of men the School could accommodate. Under this system a graduate seeking further instruction in a specialty or in general practice enters the office of a properly qualified local practitioner to act as his assistant and to attend him in his practice for a period of a few months. Thus a graduate can become familiar with certain phases of specialty practice not ordinarily encountered in a hospital. At the end of this period the man would return to the hospital to exchange places with some other man who in the meantime had been in residence.

ACTIVITIES OF THE DEPARTMENT OF PHARMACOLOGY DURING THE WAR YEARS*†‡

C. JELLEFF CARR, Ph.D.

BALTIMORE, MD.

In the autumn of 1941 there were eighteen members on the teaching and research staff of the Department of Pharmacology in the School of Medicine. An active teaching program was in progress and the second year medical students were busily engaged in studying toxicology, the response of cells to drugs, the technic of medication, and prescription writing. Sulfathiazole was just beginning to be extensively employed clinically in place of sulfapyridine, and a year before Chain and Florey had aroused the curiosity of the scientific world by their studies on penicillin.

Within six months after Pearl Harbor the department had sent two toxicologists to Edgewood Arsenal, a chemist to the War Production Board, a chemist to do antimalarial intermediate synthesis work in industry, an instructor to the Navy on oxygen-indoctrination, an assistant surgeon to the U. S. Public Health Service, two teachers to other medical schools, and a flight officer to the Canadian Air Forces.

Civilian defense and physicians' gas schools: After Pearl Harbor the feverish activity of the Office of Civilian Defense encompassed many phases of training in protection against chemical warfare agents. The services of the department were enlisted in the establishment of training courses for physicians in the mode of action of chemical warfare agents and in similar courses in the Maryland State Gas School and the corresponding school established for Baltimore County.

In reading over the old directives from the Office of Civilian Defense received at that time it is interesting to observe the measures suggested for robot bomb defense, "How to Protect Yourself Against War Gas," "The Function of Decontamination Services," and how to report the finding of suspected gas bombs to appropriate army authorities. All these directives were received by the author acting in the capacity of senior gas officer for Baltimore County. During this period Dr. John C. Krantz, Jr. and Dr. C. Jelleff Carr, assisted by Mr. W. G. Harne, prepared a series of lectures and demonstrations for the Emergency Medical Service physicians of the

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* At the request of the Board of Editors of The Bulletin this report has been published. It comprises only a portion of the history of the Department of Pharmacology, School of Medicine, University of Maryland begun some years ago by the author. The complete history from 1807 to this date is still being compiled.

† From the Department of Pharmacology, School of Medicine, University of Maryland.

‡ Received for publication November 7, 1945.

Third Service Command. These classes were held during the evening in the summer of 1942 under the most adverse conditions. Demonstrations were prepared of the effects of Lewisite and mustard gas on animals. Photographs and an excellent moulage of mustard burns on the forearm, prepared by Mr. C. D. Clarke of the Department of Art, were employed in discussions on the treatment of civilian gas casualties. In all approximately 150 physicians from a number of states were trained in this course, which was under the able direction of Dr. W. Ross Cameron.

Representatives from the department attended the physicians' course at the Chemical Warfare School, Edgewood Arsenal, in July, 1942. Following this the services of the teaching staff were extended to the Maryland State Gas School held at College Park during April and May, 1943 and the Baltimore County Gas School held in September of the same year. In addition to these classes the students of medicine during these years received a special lecture and demonstration on the mode of action of chemical warfare agents as part of the course work in pharmacology. Lectures on this subject were also given in the School of Pharmacy. The Baltimore Committee on Civilian Defense enlisted the aid of the department on several occasions, for example, in the Gas Specialists' Course at the Johns Hopkins University on the Toxicologic Properties of War Gases, and in training courses for air raid wardens at the Polytechnic Institute. These classes ran the gamut of scholastic achievement and from an educational viewpoint were a salubrious experience for the teacher. From the steel worker in the mill at Sparrows Point to the chemist in the laboratory, all had an eagerness to learn, an eagerness that was born out of possibly two fundamental instincts, self-preservation and the desire to aid the community in its emergency. All these activities laid the foundation for research problems that engaged the interest of the department for many months.

Studies on protective measures against chemical warfare agents: In 1943 Dr. John C. Krantz, Jr., head of the department, was appointed as consultant toxicologist to the U. S. Army Service Forces. The problems undertaken for this division of the armed forces were varied, difficult, and at the time highly secretive. The toxicity of "CC2," the antigas chemical used in Army clothing, was studied on many species of animals and an extensive report was submitted as a result of the work conducted. Similar toxicity studies were carried out with a variety of substances. Antimold agents, paint for the lining of canteens, an emulsifying agent, "Alkem," intended for use in the merchant marine service in the treatment of burns contaminated with crude petroleum and salt water, all were investigated from a toxicologic standpoint.

Fats without glycerin: In conjunction with the Atlas Powder Co. the department carried out extensive nutritional and toxicologic studies on fats without glycerin, mannide, and mannitan esters. This was in anticipation of a glycerin shortage, which England experienced in the last war.

Instruction: In addition to the foregoing activities concerned directly with the prosecution of the war and home defense, the staff remaining engaged in a program of teaching pharmacology in the A. S. T. P. and V-12 units of the School of Medicine and pharmacology instruction in the School of Nursing.

Scientific research: Since it is believed that the purpose of a medical school is to create new knowledge as well as to impart established facts, the staff remaining in the department pursued with vigor scientific investigations related to the action of drugs on cells and the use of drugs in the treatment of disease.

During the war years more that forty research publications emanating from this department appeared in the scientific and medical journals. Studies were engaged in that led to the development of two new volatile anesthetics, a unique antacid in the treatment of peptic ulcer, an effective oral penicillin preparation, in addition to extensive studies on "Furacin," a new anti-infective agent for the treatment of wounds.

These reminiscences are related here in order that those colleagues who have gone to distant lands may learn something of what has been happening at home. It has been the writer's intent to recall those periods during the war when in spite of teaching on an accelerated program the special skills of the staff of the department were made available to the armed forces. Now, with the conclusion of the war, these abilities may be applied to the discovery of new truths. Now, more than ever before, the department may continue to make its contribution to the medical sciences.

MONTHLY MEETINGS OF THE UNIVERSITY HOSPITAL STAFF

The following is an abstract of the paper presented by E. Roderick Shipley, M.D., Department of Surgery, at the monthly meeting of the University Hospital staff held on November 15, 1945.

THE CLINICAL USES OF FURACIN*

E. Roderick Shipley, M.D.

Furacin, a new chemotherapeutic agent, in an ointment base has been found useful in the local treatment of superficial infections. Clinical improvement paralleled the disappearance of organisms from the wound. Furacin administered orally has been of value in the treatment of pyelitis and gonococcal salpingitis.

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* From the Department of Surgery, School of Medicine, University of Maryland.

PROCEEDINGS
of the
University of Maryland Biological Society

Officers of the Society

William E. Hahn, *President*
School of Dentistry
Baltimore, Md.

Marie A. Andersch, *Treasurer*
School of Medicine
Baltimore, Md.

Rupert S. Anderson, *Secretary*
School of Medicine
Baltimore, Md.

Ronald Bamford, *Secretarial Representative*
Department of Botany
College Park, Md.

Councilors

Robert H. Oster
E. G. Schmidt
M. S. Aisenberg
G. S. Weiland

At a business meeting of the Society held on November 28, 1945 the following officers were elected:

President: Dr. William E. Hahn
Secretary: Dr. Rupert S. Anderson
Treasurer: Dr. Marie A. Andersch
Secretarial Representative at College Park: Dr. Ronald Bamford
Councilors: Four year term: Dr. E. G. Schmidt
Three year term: Dr. M. S. Aisenberg
Two year term: Dr. G. S. Weiland

The following candidates were elected to membership:

Dr. George P. Hager
Dr. Oscar N. Allen

ONE HUNDRED AND FORTY-FIFTH PROGRAM MEETING

The One Hundred and Forty-Fifth Program Meeting was held on Wednesday, October 24, 1945, at 4:00 P.M. in the Bressler Lecture Hall.

The program consisted of a paper on "Inactivation and Detoxication of Pressor Amines," by Walter H. Hartung, B.A., Ph.D., Department of Pharmaceutical Chemistry, School of Pharmacy, University of Maryland.

ONE HUNDRED AND FORTY-SIXTH PROGRAM MEETING

The One Hundred and Forty-Sixth Program Meeting was held on Wednesday, November 28, 1945, at 4:00 P.M. in the Bressler Lecture Hall.

A paper on "Some Physiologic Aspects of the Gallbladder" was presented by Maurice Feldman, M.D., Department of Gastro-Enterology, School of Medicine, University of Maryland.

An abstract of this paper will appear in the next issue of The Bulletin.

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The names listed above are officers for the term beginning July 1, 1945 and ending June 20, 1946

NEWS FROM THOSE IN THE ARMED FORCES

142ND GENERAL HOSPITAL

Harry C. Hull, M.D.

This unit was activated on April 20, 1942. The officers and nursing personnel joined the members of the detachment at Fort Riley, Kansas. After ten days at this station the unit entrained for the west coast. In retrospect, it is pertinent to note that during this period not even the slightest indoctrination into Army hospital routine was received. Two weeks were spent at the port of embarkation. Thirty-six days after the officers and nurses donned uniforms the unit sailed. It was placed in convoy with six other ships and was escorted by the now famous cruiser U.S.S. San Francisco. This was the first convoy of American troops to land at Auckland, New Zealand. After two weeks of staging, the unit embarked on the later ill fated U.S.S. Coolidge and arrived at Suva, Fiji Islands four days later.

At Suva the unit debarked and was taken on a memorable ride by truck convoy about 150 miles to the opposite side of the island. This rough ride through the rain over narrow, tortuous, mountainous roads and through exotic jungle country will long be remembered by all. After several days the first contingent moved to the barren plateau at Sabeto to help with the erection of a hospital.

Two wooden warehouses were the only buildings in sight at the proposed hospital location. In less than two weeks a tent hospital had been erected and the institution was opened formally. While it functioned temporarily in tents, wooden buildings were being erected rapidly. Within six months all patients, as well as the officers, nurses and part of the detachment were under a wooden roof. During the eight months at this site a large number of Army, Navy and Marine casualties from the Battle of Guadalcanal were treated.

In February, 1943 the personnel was moved by air back to the Suva side of the island to take over a hospital of wooden construction which was better suited for the needs of a general hospital. Here the unit was busy for a time, but after several months the census began to decrease steadily until in September, 1944 the number of patients consisted of only a few hundred. During this period the hospital, in addition to the routine care of the surgically and medically ill, served in a chain for the evacuation of casualties to the zone of the interior. Much time was spent, too, in rescreening a division on the islands that was training for combat. One division that had returned from the battle zone was suffering from malaria and required considerable attention.

In September, 1944 the unit again embarked for a new station which later proved to be India. On this long voyage the ship put in at Melbourne and all members were granted shore leave. It was the first time in twenty-nine months that many of them had had a glimpse of a modern city so the interval was thoroughly enjoyed. The ship then proceeded to Bombay, at which point the unit debarked and entrained for Calcutta, where it arrived five and a half days later. At Calcutta the 142nd General Hospital took over the spacious, well erected 263rd General Hospital located in the residential section of the city. After many idle months the unit became busy. Several months after its arrival in Calcutta the status of the 142nd General Hospital was increased from 1000 to 2000 beds. It was one of the two largest hospitals in the China-Burma-India theater and served as the funnel for the evacuation of all troops to the zone of the interior. The census numbered between 1600 and 2300. Service at this station was most interesting and everyone was obliged to become acquainted with tropical medicine. Early in 1945 the members of the unit began to leave for the States on rotation; by August the last member had left.

During the entire period overseas approximately 29,000 patients received treatment. As can be noted by this figure, it was not a large number. It was not the lot of this unit to be as busy or as idle as some other hospitals. It is a certainty that all of the personnel are glad to be home again. The experience will not be forgotten. However, at present most of them are satisfied to forget for the nonce and continue with their normal pursuits.

42ND GENERAL HOSPITAL

George H. Yeager, M.D.

With the development of the point system in the Army, all of the remaining original professional officers of the 42nd General Hospital have either returned or are en route home. Although the 42nd General Hospital is now functioning in Tokyo in a hospital building that was known as "The St. Luke's International Medical Center," it has, at this time, no professional representatives from the University of Maryland. To maintain the professional strength of the unit, officer personnel of another General Hospital, (an Army nonaffiliated unit), has been utilized as replacements.

The 42nd General Hospital was activated on April 20, 1942 under the command of Col. M. C. Pincoffs. The following associates of the School of Medicine and the school of Dentistry of the University of Maryland formed the major portion of the professional staff: Drs. Pincoffs, Brager, Coonan,* Dorsey (D.D.S.), Gundry, Merkel, Mitchell, Ullrich, Waller, Yeager, Bowie, Brooks, Cotter, Crawford, Garlick, Inman (D.D.S.), Karfgin, Reavis, Schwartz, Siwinski, Trout, Bailey (D.D.S.), Diggs, Karns, Long, Mack, Mueller, and Vollmer. Additional professional and administrative officers were obtained from Army sources in order to develop the unit to its authorized strength.

The unit was integrated at Fort Custer, Michigan with great speed. Training, of necessity, was minimal in view of the fact that on May 19, 1942—a month after activation—it was sailing into the Pacific.

In July, 1942 the 42nd General Hospital started functioning in Brisbane, Australia in a convent school building—the Convent of the Sacred Heart. Because of the physical limitations of the building, bed space was inadequate. This site was therefore utilized as a section for acutely ill patients; sections for convalescent and psychiatric patients were developed and operated at adjacent sites. Approximately a year and a half later, all three sections were consolidated into a new cantonment type hospital in the same geographic area. During several phases of activity when at this location the patient census reached a peak of 1900.

Drs. Garlick, Mueller, Karns, and Long were detached from the unit in order to develop the Third Portable Hospital. This unit established a most enviable record for itself throughout the entire Southwest Pacific campaign.

In April, 1945 the 42nd General Hospital packed for movement to Manila, P. I.

The period of time spent in Manila was brief. A section of the Hospital Center in Manila had been allocated to the unit. All personnel had moved in, the enlisted men's area was completed, and equipment partially set up when the war dramatically ended. The unit was ordered to repack and move. Within four days it was en route. Destination—Japan?

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* Deceased.

On August 30, 1945 aboard the U. S. S. Hospital Ship Marigold the unit had its first sight of enemy territory—Yokohoma, and on the distant horizon—Tokyo. Temporary hospital facilities were established in a warehouse in Yokohoma and all liberated American and Allied prisoners of war from northern Honshu, the main island of Japan, were processed. With the completion of this task the unit then established itself in Tokyo in a modern hospital building that had been constructed primarily through the interest of the American Episcopal Church.

What was the role of the "42nd" in World War II? Perhaps a commendation received from General MacArthur expresses it most succinctly.

"On the occasion of the opening of St. Luke's Hospital by the 42nd General Hospital, I desire to make of record my grateful appreciation for the splendid services your officers, nurses and enlisted men have rendered in the campaign which culminated in the liberation of the Philippines and the occupation of Japan.

"Through that long bitter period from May, 1942 when your hospital unit arrived in Australia, until peace was restored upon the surrender of Japan, it has proved a tower of strength in ministering to the sick and wounded of our military forces committed in the Southwest Pacific area and thereby has upheld the highest traditions of the American Army and the medical and nursing professions as well.

"All personnel of the 42nd General Hospital may carry with them upon return to civil life a sense of that deep satisfaction which alone springs from duty well done."

CITATIONS AND AWARDS

DISTINGUISHED SERVICE MEDAL

Major Gen. Norman T. Kirk, Surgeon General of the U. S. Army, has been awarded the Distinguished Service Medal by Gen. Brehon Somervell, Commanding General of the Army Service Forces, in recognition of "his outstanding leadership . . . in directing the largest Medical Department in the history of the United States Army." In part the accompanying citation stated, "By careful planning, efficient administration, and dynamic example he made possible extraordinary care for sick and wounded American soldiers . . . care which has never been equalled in any war."

General Kirk graduated from the School of Medicine, University of Maryland in 1910.

MERITORIOUS SERVICE UNIT PLAQUE

The 42nd General Hospital has been awarded a Meritorious Service Unit Plaque by the Commanding General of the Eighth Army, with the following commendation:

"For superior performance of duty in the Philippine Islands and Japan from 15 August 1945 to 15 October 1945. During this period the 42nd General Hospital conducted the processing of Allied military and civilian personnel who were liberated from Japanese prison and internment camps. The excellent organization of the processing team, the devotion to duty manifested by all individuals of the unit and the high standard of professional medical attention rendered to the recovered personnel alleviated suffering and saved the lives of many patients who were victims of Japanese neglect and starvation. Throughout this rendition of service the 42nd General Hospital demonstrated a high standard of discipline and military courtesy and established a splendid record of service.

"By command of Lieutenant General Eichelberger:"

In a personal letter to the Dean of the School of Medicine from Brig. Gen. George W. Rice, Class of 1916, Surgeon of the Eighth Army in Japan, he makes the following statement with reference to the 42nd General Hospital:

"I know of no Medical Department unit that has done such splendid work and made so many staunch friends as has this unit."

LEGION OF MERIT

Col. George H. Yeager, M.C., A.U.S., commanding officer of the 42nd General Hospital, has been awarded the Legion of Merit for his service in Australia, the Philippine Islands, and Japan.

Capt. Joseph W. Kimbrough, U.S.N., Class of 1925, recently was cited "for exceptionally meritorious conduct in the performance of outstanding service as surgeon of a Marine division on Okinawa from April 1 to June 22."

The citation read:

"Captain Kimbrough, with painstaking care and thoroughness, planned and supervised field sanitation measures and the medical care and evacuation of the wounded, displaying a high degree of professional knowledge and diligent application. Heedless to intense enemy fire, Captain Kimbrough visited the most forward medical collecting stations of assault troops. By his courage, perseverance and exceptional knowledge of field medicine and surgery, he effectively overcame the many difficulties presented during the conduct of operations. His actions and skill resulted in many lives being saved and contributed materially to the success of the campaign."

Captain Kimbrough has been a member of the United States Navy Medical Corps since 1926.

BRONZE STAR MEDAL

Capt. William T. Layman, Class of 1939, was awarded the Bronze Star Medal for "meritorious service in direct support of combat operations from 28 July, 1944 to 8 May, 1945, in France, Belgium, Holland, and Germany. Although many bridging operations were carried out under observed enemy artillery fire, Captain Layman remained at the site of operations, rendering immediate aid as battalion surgeon to the wounded. By his tireless efforts, disregard of his own personal safety and fearless devotion to duty he was an inspiration to the men working under him and reflected much credit upon himself and the armed forces."

PROMOTIONS

Lieut. Gibson J. Wells, M.C., U.S.N.R., Class of 1936, has been promoted to the rank of Lieutenant Commander. He is serving at sea aboard the L.S.D. 13, U.S.S. Casa Grande, both as medical officer and acting chaplain, and participated in the invasions of Leyte, Lingayen Gulf, and Okinawa.

NEWS ITEMS

Capt. Ralph B. Roseman, Class of 1936, recently returned to Munich, Germany from a medical mission to Sweden. His appointment by the Theater Surgeon, USFET, to study and observe medical practice in Swedish hospitals, lasted about a month. As one of the few Americans permitted to visit Sweden at this time he has had opportunity to observe postwar conditions in a neutral country. He writes of his experiences as follows:

"It seems longer than a day ago that I was in Sweden studying some of the peacetime problems of pediatrics, gynecology, and cancer research; and now I am back in wartorn Bavaria, working with Army problems of preventive medicine to reduce typhus and influenza this winter.

"After looking at the bombed cities and war conditions of Europe for the past twenty months my first impression of Sweden reminded me of the last night of peace back home. It may have been the colorful array of neon signs in Stockholm or the fascination of luxuriously decorated shops that reminded me of December 6, 1941. What a relief to visit a city that had known peace for the past five years.

"But Sweden does have problems that arose out of the war; 40,000 children from countries occupied by Germany were cared for in Sweden during the war. Refugees from Norway, Finland, and Denmark found Sweden a peaceful home and rest from war.

"The fuel supply is an acute problem as no coal can be imported at present. Huge wood piles stand outside hotels and buildings. Wood will be the only fuel this winter, and with the heat shortage hot water is rationed.

A Swedish physician friend introduced me to the national institution of Swedish baths. The masseur who attended me seemed to have his heart in his work as he scrubbed me with a 14 inch stiff-bristled brush while I rested on a marble slab after the steam bath.

"While attending medical clinics, lectures, and surgical operations I had plenty of time to observe the administrative and medical standards maintained in the four largest hospitals in Stockholm. They are on a par with the most modern American hospitals. At the Radium Hemmet hospital they have advanced far in the treatment of cancer by radium. I was also impressed by the wealth of statistical studies and records they have made in cancer research.

"My tour included visits to several Swedish Air Fields and a pleasant day at the Medical School of the ancient University of Upsala. Probably the most striking thing to anyone used to the poverty-stricken conditions of European cities is the absence of slums in Stockholm. The section called the Old City has been preserved with its ornamental stone doorways and artistic wrought iron gateways typical of Hanseatic architecture. Unlike the old sections of the other capitols of the world, this section did not decay into a slum area but the buildings have been modernized and are considered fashionable places to live. When I last saw Philadelphia a start had been made in that direction and I hope it has continued. Large modern apartment houses and some prefabricated houses that appear quite comfortable are homes of the working people.

"By contrast to the most modern views everywhere is the 'rush hour' period about five o'clock when more than half the city seems to be riding bicycles. The wide streets seem to be a mass of well ordered wire, steel, and humanity as they keep in line around traffic circles and markers.

"We returned via the same route to Paris, where I reported on my mission. Shortly after I flew to Munich and rejoined my group at an airdrome outside the city. I had left peace again and was back with the problems of the war's aftermath."

Lieut. Irving J. Taylor, Class of March, 1943, was graduated on September 27, 1945 from the Army's School of Military Neuropsychiatry held at Mason General Hospital, Brentwood, N. Y.

Capt. Edward Siegel, Class of 1938, was married on September 25, 1945 to Capt. Gretchen R. Boody of Hudson, Wisconsin. The wedding took place in Okinawa and the bride was given away by General Joseph Stilwell. Captain Siegel is the first American to be married on this island.

Capt. Aaron Feder, Class of 1938, is attached to the 60th General Hospital at Manila.

ITEMS

DOCTOR "STILL IN HARNESS" AFTER SIXTY YEARS' SERVICE

Sixty-six years ago last June, sixty young men were graduated in medicine from the University of Maryland and in October of this year the only living member of that class celebrated his ninetieth birthday. He is Dr. George H. Hocking and, as far as could be learned, he is Maryland's oldest practicing physician. To quote his own words, "he is still in harness," that is, he still maintains an office practice although he gave up the general practice of medicine several years ago.

Dr. Hocking was born in Allegany County on October 8, 1855. His parents came to this country from Cornwall, England in 1849. He received his preliminary education at the Barton public school in Allegany County and studied the classics under private tutors.

After graduating in 1879 Dr. Hocking began the practice of medicine in Garrett County, Maryland, and two years later moved to Allegany County to take over the practice of one of that county's most distinguished physicians, Dr. E. Ellis Porter. In 1881, upon the death of Dr. Alexander Thompson of Mt. Savage, Dr. Hocking moved to that town, where for fifteen years he was surgeon for the old Cumberland and Pennsylvania Railroad and the Union Mining Company.

In 1897 Dr. Hocking moved to Baltimore and took over the practice of his younger brother, Dr. John W. Hocking, who died that year. The residence he occupies is known as the "doctor's house" because it has housed a practicing physician continuously since 1855.

"Before coming to Baltimore," Dr. Hocking said, "I delivered more than a thousand babies and have delivered many thousands more since in the city and county. I took care of most of them until they reached adult life.

"In the old days it was pretty discouraging for a physician to be able to do nothing for a patient who was ill with yellow fever or some of the other simple diseases of today. All we could do was to wait for him to die. Even whooping cough killed one out of every ten babies before they reached one year old. I am glad that I have lived long enough to see medicine make marvelous strides, and my love for the profession has made me keep up with its progress." He said that he never turned down a call day or night for more than fifty years.

Dr. Hocking has been a member of the Maryland Medical Society for the last fifty years and is the only member of the Baltimore County Medical Association to serve as its president for two years.

The Emerson Drug Co. of Baltimore has awarded a second fellowship of $5,000 to the Department of Pharmacology of the School of Medicine, University of Maryland, for the purpose of studying analgesics and the mechanism of the relief of pain. The work is under the direction of Dr. John C. Krantz, Jr., Professor of Pharmacology. Dr. Harry Iwamota will work under this grant in the Department of Pharmacology.

The Eaton Laboratories of Norwich, N. Y. have given a grant of $2,000 to Dr. Krantz for the purpose of supporting the general research program of this department.

Official U. S. Signal Corps photo.

Brig. Gen. Frank W. Weed, U.S.A. (Retired)

OBITUARIES

BRIG. GEN. FRANK W. WEED, U. S. A. (Retired)

Brig. Gen. Frank W. Weed, U. S. A. (Ret.), died on October 6, 1945 in the Letterman General Hospital, U. S. Army, San Francisco, California.

General Weed was born in Baltimore and was a graduate of the School of Medicine of the University of Maryland in the Class of 1903. He entered the Army Medical Corps the following year and had a long and distinguished career. During World War I he was awarded the Distinguished Service Medal because of his accomplishments during that war. After the first World War he became Editor-in-Chief of the "Medical and Surgical History of the World War," in which capacity he served eight years until the completion of the project. He graduated from the Army War College in 1929. Later he served three years in the Philippine Islands, from 1932 to 1935, during part of which time he was the Surgeon at Fort Mills, Corregidor Island, and later Commanding Officer of the Sternberg General Hospital in Manila. During his last year he served for a time as Department Surgeon for the Philippine Division. He was Surgeon of the U. S. Military Academy at West Point, New York from 1935 to 1939. He then became Surgeon of the First Army until the following year, when he was ordered to duty as Commanding Officer of the Letterman General Hospital, Presidio, San Francisco, California. On August 18, 1942 he was promoted to the grade of Brigadier General. He was retired in 1944 because of an illness which terminated in his decease in October.

General Weed is survived by his widow, Mrs. Gail Weed, a son, William H. Weed of Jersey City, New Jersey, and a daughter, Mrs. Robert C. Aloe, whose husband is serving as a colonel of infantry overseas at the present time.

WILLIAM C. BOTELER, M.D.

Dr. William C. Boteler, Class of 1878, died in Minneapolis, Minn. on September 17, 1945 at the age of ninety years.

Born in Middleton, Md., he attended Pennsylvania College at Gettysburg, Pa., the School of Medicine of the University of Maryland, Johns Hopkins University, and Jefferson Medical College at Philadelphia during the years 1873 to 1880. He then became physician and surgeon at the Otoe and Missouri Indian Agency in western Nebraska, where he assisted in compiling the first annual report of the Bureau of Ethnology of the Smithsonian Institute. In St. Joseph, Mo. he commenced his practice as eye, ear and throat surgeon, which he continued in Kansas City, Washington, D. C. and Frederick, Md., and in 1909 made his permanent home in Minneapolis.

He was married in 1886 to Miss Kate McCrary, daughter of George W. McCrary, Secretary of War in President Hayes' Cabinet.

Dr. Boteler retired from practice shortly after moving to Minneapolis.

SAMUEL A. NICHOLS, M.D.

Dr. Samuel A. Nichols died suddenly on November 3, 1945 at his home near Clarksville, Md. He was seventy-five years old and had visited his patients until the afternoon before his death.

Dr. Nichols received his degree in medicine from the School of Medicine of the University of Maryland in 1895. He was past president of the Howard County Medical Association, the county delegate for the last six years to conventions of the Medical and Chirurgical Faculty of Maryland, and a member of the Fifth District Farm Club of Howard County.

J. EDWARD NORRIS, M.D.

Dr. J. Edward Norris died December 7, 1945 at Bon Secours Hospital in Baltimore, two days following an automobile accident.

He was graduated from the School of Medicine, University of Maryland, Class of 1917, and practiced for more than twenty years in Baltimore. He was commissioned a first lieutenant in the Army during World War I. Dr. Norris had served as physician for the Baltimore and Ohio Railroad. He was associated with the University and Bon Secours hospitals and worked for many years in the Obstetrics Clinic of the former. Every summer, before the war, he took postgraduate work abroad and visited the Rotunda Hospital in Dublin, Ireland.

JACOB THORKELSON, M.D.

Dr. Jacob Thorkelson, P. & S. 1911, died on November 20, 1945 in Butte, Mont. of a heart ailment. He was sixty-nine years of age.

Born in Norway, Dr. Thorkelson came to this country in 1892 and was naturalized in 1900. He had been practicing medicine in Montana since 1913. Dr. Thorkelson also served in Congress as a representative from Montana.

Brown, Flavius Hugh, Summerville, W. Va.; P. & S., class of 1911; aged 66; died, June 8, 1945, of cerebral hemorrhage.

Carder, George L., Hagerstown, Md.; class of 1891; aged 81; died, July 19, 1945, of chronic myocarditis and pneumonia.

Chenowith, Ralph S., Baltimore, Md.; class of 1943; aged 30; died, October 22, 1945.

Collins, Henry John, Trenton, N. J.; class of 1917; served during World War I; aged 55; died, June 21, 1945, of chronic myocarditis and auricular fibrillation.

Conklin, William Homer, New York City; P. & S., class of 1906; served during World I; aged 60; died, May 10, 1945, of cerebral arteriosclerosis and psychosis.

Crist, George Bruce, Frederick, Md.; class of 1914; aged 52; served during World War I; entered reserve corps of U. S. Army as a Captain on December 24, 1923; began active duty as a Major on August 14, 1941; died, April 8, 1945, of coronary occlusion in Fredericksburg, Va.

Eckert, Isidor, New York City; B.M.C., class of 1908; aged 58; died, April 6, 1945.

Irvine, Wesley J., Manawa, Wisc.; class of 1892; aged 78; served during World War I; died, June 6, 1945, of cerebral thrombosis.

LeCates, Howard Edward, Delmar, Del.; class of 1913; aged 57; died, July 19, 1945.

Magness, S. Lee, Baltimore, Md.; class of 1902; aged 67; died, November 22, 1945 after a long illness.

Rudisill, John David, Lenoir, N. C.; class of 1922; aged 51; served during World War I; died, July 28, 1945.

Schoonover, Robert A., Greensboro, N. C.; B.M.C., class of 1905; aged 65; died, July 24, 1945, of carcinoma of the rectum.

Shollenberger, I. W., Reading, Pa.; class of 1901; aged 69; died in November, 1945 of injuries received in an automobile accident.

Sitgreaves, Charles Burr, Pemberton, N. J.; B.M.C., class of 1902; aged 73; died, May 24, 1945, of lymphatic leukemia and diabetes mellitus.

Sprecher, Daniel Boteler, Hollidaysburg, Pa.; P. & S., class of 1881; aged 90; died, June 17, 1945, of uremia.

Vandeventer, Vivian H., Ishpeming, Mich.; P. &. S., class of 1896; aged 73; died, July 3, 1945, of cerebral hemorrhage.

Wurtzel, George Louis, New York City; P. & S., class of 1912; aged 57; served during World War I; died, June 28, 1945.

BULLETIN

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PRIMARY CARCINOMA OF THE LUNG, INCLUDING A CLINICO PATHOLOGIC REPORT OF FORTY-FIVE CASES AT THE UNIVERSITY HOSPITAL FROM 1934 TO 1946*†

H. A. HORN, M.D.**

In 1935 Warner (48) reviewed eleven cases of primary lung carcinoma occurring at the University Hospital prior to 1934 and presented a pathologic study of these cases. It is the purpose of this paper to bring to date a record of all proved cases of bronchogenic carcinoma occurring in the autopsy records since the original study.

INCIDENCE

It is universally recognized that primary lung carcinoma has been seen with increasing frequency during the past decade. Whether this increase is apparent or real remains problematical. Most writers believe the rise an apparent one and cite the following contributing factors (46):

1. Greater clinical awareness of the condition.
2. Improved methods of diagnosis, especially in roentgenology and bronchoscopy.
3. Increasing interest in the tumor by thoracic surgeons.
4. Improved pathologic diagnoses, with strict classification of tumor.

Huepner (20), however, feels that since the increased incidence of the tumor has occurred in hospitals which have maintained uniformly and scientifically controlled pathology laboratories for many years, the growing appearance of lung cancer represents an actual increase in this malignancy. A representative study is found in Steiner's (46) compilation of 5515 autopsies in ehich he encountered 1661 neoplasms, 126 of which were carcinomas of the lung, giving a total tumor incidence of 7.6 per cent and of lung carcinoma of 2.3 per cent. In a group of 7685 consecutive necropsies reported by Koletsky (23) at the Cleveland City Hospital the lung was the second

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* From the Department of Pathology, University of Maryland School of Medicine.

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most frequent site of origin of primary malignant lesions, being exceeded only by the stomach. In the University of Maryland series, in 2686 autopsies 45 cases of bronchogenic carcinoma occurred, the incidence being 1.7 per cent.

Dorn (8) reports that slightly more than 8000 new cases of primary lung cancer are being diagnosed for the first time each year. With such a striking fact confronting the medical world, it would appear more profitable to abandon the dispute and seek an explanation for the neoplasm, however real or apparent the increase. This presents another apparently unanswerable problem.

ETIOLOGY

The etiology of bronchogenic carcinoma remains obscure. Chronic irritation, bacterial, chemical or physical, persists as a likely or probable contributing factor, despite recent contradictory evidence in the literature. Winternitz predicted an increase in the appearance of the neoplasm following the influenzal epidemic of 1918–19. Ewing was firmly convinced that bronchogenic carcinoma occurred more frequently associated with tuberculosis. Macklin and Macklin (28) , in a critical review of the subject of chronic irritation causing carcinoma of the lung, submitted statistical evidence that this hypothesis is unproved and eliminated chronic bronchitis, bronchiectasis, asthma, emphysema, pulmonary abscess, influenza, tuberculosis, and pneumonia as predisposing factors.

Inhalation of certain chemicals in the form of dust has become an important consideration in the etiology of lung cancer, particularly in the field of industrial medicine. Karr and Vorwald (21) compiling observations made from roentgenologic, post mortem and experimental studies, concluded that inhaled dusts, except those containing known carcinogenic agents, cannot be considered as causative factors in the development of bronchogenic carcinoma. Holleb and Anguist (17) in a study of 12 cases of carcinoma of the lung in the presence of pulmonary asbestosis reached the same conclusion.

The use of tobacco and its relation to lung cancer has been a favorite subject of investigation. Ochsner (34) strongly affirms that the rise in bronchogenic carcinoma is caused by the increasing use of tobacco. Campbell (7) in a statistical study found those engaged in the preparation and sale of tobacco to have an abnormal liability to lung cancer. Grace (11) suggested that "possibly the carcinogenic irritants from tobacco tar are deposited in the lung and the end result of this irritation in a biologically susceptible individual is the production of bronchogenic carcinoma." No one proposes an explanation, however, to interpret the fact that while by far the greatest increase in smokers during the past two decades has been among women, bronchogenic carcinoma has been seen strikingly more often in males than females. In the University of Maryland Hospital series, forty cases occurred in men and five cases in women.

The most conclusive evidence of an etiologic agent in the production of lung cancer has come from the studies of the Schneeberg and Joachimstal miners. Dust, cobalt, arsenic, and radioactive emanations have been incriminated here at various times, but it is believed now that all but radioactive emanations have been eliminated, since the neoplasm occurred not only among the miners but also those engaged in the purification and commercial preparation of radioactive substances (20, 28). It is interesting to recall that the radium dial watch workers in the United States died of osteogenic sarcoma with no lung carcinoma reported. Block (3) has suggested that commercial lead in the form of lead dust and fumes may be a potential factor in the production of pulmonary cancer resulting from the presence of radio-active elements in this common metal.

The occupations of the individuals among the cases seen at the University of Maryland Hospital were investigated as far as possible. Although the findings were of no statistical significance, it was interesting to observe that few, if any, of the occupations could be classified among the "industrial hazards" as related to lung malignancy. (See Table I.)

SYMPTOMATOLOGY AND DIAGNOSIS

The symptomatology of carcinoma of the lung varies according to the location of the tumor, the cellular character and activity of the growth, the amount of regional extension, secondary changes in the lung, and the extent of metastases.

Cough is the most frequent complaint. At first it is non-productive, hacking in character, the type so often designated as a cigarette cough. This particular cough is associated with growths in the main bronchus; as the growth proliferates in the bronchial lumen, the cough becomes productive and paroxysmal in nature, with hemoptysis of varying amounts occurring later.

Chest pain is a relatively early symptom; it is described most often as neuralgic in type and often radiates into the arm and shoulder of the involved side.

This is particularly true of tumors existing in the apex. Severe pain often signifies that the lesion has spread to the pleura, mediastinum, or thoracic wall. Dyspnea is a prominent symptom and is caused by a complete or partial bronchial obstruction. When partial obstruction is present, cyanosis accompanies the dyspnea because of insufficient oxygenation of blood flowing through a partially atelectatic lung. When the obstruction is complete, cyanosis is not striking as the atelectatic area is by-passed by the circulation.

A history of significant weight loss is uniformly obtained. Twenty-one

TABLE I

	AUTOPSY	COLOR, AGE, SEX	OCCUPATION	DURATION	CLINICAL DIAGNOSIS	PRIMARY SITE	SECONDARY LESIONS	HISTO-PATHOLOGY OF TUMOR	REGIONAL METASTASES	VISCERAL METASTASES	BONE METASTASES	BRAIN METASTASES	OTHER SITES
1	2059	White, male, 40	Realtor	9 months	Not available	Right bronchus	None	Small cell	Mediastinal, cervical, axillary nodes	None	None	Not removed	Skin
2	2076	White, male, 42	Laborer	5 months	Bronchogenic ca.	Left upper bronchus	Atelectasis	Small cell	None	Liver, adrenals, kidneys & pancreas	Skull, ribs	Cerebrum meninges	
3	2099	White, male, 60	Laborer	4 months	Carcinoma rt. lung	Rt. lower lobe bronchus	Atelectasis, pneumonia	Small cell	Mediastinal, retroperitoneal nodes	Liver, gall bladder	3, 5 rt. ribs; body L2 vertebra	None	Pleural extension
4	2127	White, male, 61	None	16 months	Ca. rt. lung with metastases to 6 & 7 T.	Rt. lung	Bronchopneumonia, abscess	Squamous cell	None	None	3 to 9 ribs; 5, 6, 7 dorsal vertebrae	None	Right posterior chest wall
5	2282	White, male, 75	None	Not known	Bil. lobar pneumonia	Rt. lung	None	Adenocarcinoma	None	None	None	None	None
6	2306	White, male, 51	Auditor	14 months	Metastatic carcinoma	Right major bronchus	Bronchiectasis	Squamous cell	Hilic, mediastinal, aortic, peripancreatic pelvic, inguinal nodes	Liver, spleen	None	None	None
7	2611	White, male, 65	Cement finisher	3 months	Ca. of bronchus with metastases	Right major bronchus	Bilateral bronchopneumonia	Small cell	Mediastinal nodes	None	None	None	None
8	2647	White, male, 58	Grocer	3.5 months	Cerebral thrombosis; poss. brain tumor	Right lower lobe bronchus	None	Adenocarcinoma	Tracheobronchial nodes	None	None	None	None
9	2666	Colored, male, 47	Cook	4.5 months	Pulmonary fibrosis rt. lower lobe	Right lower lobe bronchus	Bronchiectasis, atelectasis; multiple abscess	Squamous cell	Hilic, mediastinal, retroperitoneal nodes	None	None	None	Pericardium
10	2710	White, male, 56	Laborer	2.5 months	Lung abscess, rt. lower lobe	Right major bronchus	Multiple abscesses pneumonitis, bronchiectasis	Squamous cell	Hilic nodes	None	None	None	None

11	2780	White, male, 48	Farmer	6 months	Lung abscesses, left	Left lung	Lung abscesses	Small cell	Right lung	None	None	Not removed	None
12	2791	White, male, 49	Physician	20 yrs. (?)	Sq. cell carcinoma, lung	Right major bronchus	Multiple abscesses; bronchiectasis, atelectasis	Squamous cell	Hilic, tracheobronchial nodes	None	None	None	None
13	2792	White, male, 37	None	6 months	Bronchogenic carcinoma (?)	Right major bronchus	None	Squamous cell	Hilic, tracheobronchial, cervical, axillary, preaortic, peripancreatic	Kidneys, liver, pancreas, left adrenal, omentum mesentery	None	None	Visceral pleura, rt. diaphragm, rt. auricle, pericardium, abdominal wall
14	2859	White, male, 48	Salesman	6–7 months	Primary malignancy of lung with abscess	Right lower lobe bronchus	Bronchiectasis, atelectasis, pneumonitis	Squamous cell	None	None	None	None	None
15	2974	White, male, 52	None	5 months	Rheumatic cardiovascular disease	Right upper lobe bronchus	Abscess, broncho-pneumonia	Adenocarcinoma	Axillary, peripancreatic nodes	Liver, spleen	None	None	None
16	3039	White, female, 41	Housewife	6 months	Bronchogenic carcinoma, right lung	Bilateral diffuse	None	Adenocarcinoma	Mediastinal retroperitoneal, pancreatic, axillary nodes	None	None	Cerebellum, thalamus, cerebral cortex	None
17	3130	White, male, 74	Retired; former occupation not known	3 months	Pulmonary fibrosis	Left upper lobe	None	Small cell	Hilic, mediastinal, peripancreatic nodes	Liver, pancreas, right adrenal	None	None	None
18	3350	White, male, 34	Salesman	4 months	Brain tumor left temporal lobe	Left lower lobe	None	Adenocarcinoma	Hilic nodes	Liver, kidneys, adrenals	None	Left temporal lobe	None
19	3385	Colored, male, 52	Farm laborer	1 month	Bronchogenic ca.	Left lung	None	Small cell	Tracheobronchial, supraclavicular, mesenteric, axillary nodes	Liver, adrenals, spleen, rt. kidney, stomach, descending colon	None	Cerebrum	Pericardium
20	3412	Colored, male, 62	None	2 months	Congestive failure	Right major bronchus	Bilateral bronchiectasis	Small cell	None	None	None	Not removed	None

TABLE I—*Continued*

	AUTOPSY	COLOR, AGE, SEX	OCCUPATION	DURATION	CLINICAL DIAGNOSIS	PRIMARY SITE	SECONDARY LESIONS	HISTO-PATHOLOGY OF TUMOR	REGIONAL METASTASES	VISCERAL METASTASES	BONE METASTASES	BRAIN METASTASES	OTHER SITES
21	3520	White, male, 56	Laborer	24 months	Bronchogenic ca. with metastases	Right middle lobe bronchus	Bronchiectasis; miliary abscesses; empyema	Squamous cell	Mediastinal, peribronchial, right post. cervical glands	Left adrenal	None	Not removed	Superior vena cava, base of aorta both auricles
22	3714	White, male, 54	Farmer	1.5 months	Tumor, rt. cerebrum	Hilus, rt. lung	None	Adenocarcinoma	None	None	None	Parietal lobes	None
23	3863	White, male, 54	Plant foreman	3–4 months	Bronchogenic ca., rt. lung	Right lung	Emphysema	Squamous cell	Mediastinal nodes	Liver, pancreas	Bone sites not stated	Not removed	None
24	3869	White, male, 78	Retired; former occupation not known	3 months	Carcinoma lung, right	Right upper lobe	Bronchiectasis, confluent lobular pneumonia	Squamous cell	None	None	1, 2, 3 ribs	None	None
25	3886	White, male, 51	Not known	2 months	Mediastinal lymphoma	Right lower lobe bronchus	Bronchiectasis; atelectasis; bronchopneumonia	Small cell	Mediastinal nodes	None	None	None	Superior vena cava, pericardium
26	4001	White, female, 51	Housewife	6 years	Metastatic carcinoma, primary in lung or thyroid	Right lung	None	Squamous cell	Hilic and peripancreatic nodes	Liver, left adrenal	None	Cerebrum	None
27	4009	White, male, 62	Farmer	1–2 months	Carcinoma of lung or G. I. tract	Right main bronchus	Atelectasis; bronchiectasis; pneumonitis	Small cell	Hilic and peripancreatic nodes	Liver, pancreas, adrenals	Ribs, multiple. Sella turcica	None	None
28	4017	White, male, 60	Laborer	2.5 months	Carcinoma, rt. lung with metastases	Right bronchus	None	Small cell	None	Liver, right kidney	None	Cerebrum	None
29	4055	Colored, male, 44	Bootblack	4 months	Bronchogenic carcinoma, left	Left upper lobe	None	Squamous cell	None	Liver, right lung	None	None	None
30	4059	White, male, 31	Fireman	12 months	Lung abscess	Left upper lobe	Bronchiectasis	Small cell	Mediastinal nodes	Pancreas	None	None	None
31	4188	White, male, 58	Printer	3 months	Metastatic carcinoma, brain	Right upper lobe	None	Squamous cell	None	None	None	Left occipital lobe	None

32	4202	White, male, 63	Laborer	3 months	Bronchogenic carcinoma	Right lung	None	Squamous cell	Axillary (rt.) peri-aortic, peri-bronchial	Liver, spleen, adrenals, pancreas, lt. lung	None	None	None
33	4208	Colored, male, 37	None	27 months	Bronchogenic carcinoma with metastases	Left upper lobe bronchus	Bronchopleural fistula	Squamous cell	Para-aortic nodes; mediastinal nodes	Right kidney, lung and adrenal	None	None	Right shoulder (?)
34	4215	White, female, 52	Domestic	8 weeks	Glioma, rt. parietal lobe	Right lower lobe	None	Adenocarcinoma	None	None	None	Right parietal lobe	None
35	4338	White, male, 43	Shoe cutter	17 years (?)	Pulmonary tuberculosis; possible bronchogenic carcinoma	Right upper lobe	Necrosis cavitation; atelectasis; pulmonary fibrosis	Squamous cell	None	None	None	Not removed	None
36	4352	White, male, 43	Not known	3.5 months	Bronchogenic carcinoma	Right lung	Massive hemorrhagic effusion	Adenocarcinoma	None	Miliary carcinosis, lungs, bilateral	None	None	Pericardium
37	4455	White, male, 53	Invalid	3 months	Bronchogenic carcinoma, left lung	Left lower lobe	Atelectasis	Small cell	Mediastinal peripancreatic nodes	Liver, adrenals	None	Cerebrum	Pleura, pericardium
38	4464	White, male, 37	Truck driver	11 months	Bronchogenic carcinoma with widespread metastases	Left lung	Atelectasis	Adenocarcinoma	None	Left adrenal	None	None	Left diaphragm and pleura
39	4529	Colored, female, 55	None	2 months	Bronchogenic carcinoma	Right upper lobe	Atelectasis	Small cell	Mediastinal nodes	Adrenals	None	None	Pleura, diaphragm
40	4559	Colored, male, 71	None	6 months	Bronchogenic carcinoma with metastases to ribs and pleura	Left lower lobe	None	Small cell	Para-aortic coeliac, nodes	Liver, left adrenal, rt. lung	None	None	Pleura, diaphragm
41	4590	White, male, 68	Retired, former occupation not known	8 months	Bronchogenic carcinoma with cerebral metastases	Right lower lobe	Hydrohemothorax, right	Adenocarcinoma	None	Adrenals	None	None	Pleura, pericardium, omentum
42	4600	Colored, male, 61	Oyster shucker	6 months	Metastatic brain tumor	Right upper lobe	None	Small cell	None	None	None	Left frontal lobe	None

TABLE I—*Continued*

	AUTOPSY	COLOR, AGE, SEX	OCCUPATION	DURATION	CLINICAL DIAGNOSIS	PRIMARY SITE	SECONDARY LESIONS	HISTO-PATHOLOGY OF TUMOR	REGIONAL METASTASES	VISCERAL METASTASES	BONE METASTASES	BRAIN METASTASES	OTHER SITES
43	4654	White female, 54	Housewife	5 weeks	Bronchogenic carcinoma	Right middle & lower lobes	None	Adenocarcinoma	Mediastinal nodes	Liver	None	Not removed	Pleura
44	4666	White, male, 76	Retired, former occupation not known	5 months	Arteriosclerotic cardiovascular disease	Left upper lobe	None	Adenocarcinoma	None	None	None	None	Lungs, bilateral
45	4676	White, male, 57	Electrician	3 months	Metastatic carcinoma, primary site undetermined	Left lower lobe	None	Small cell	Hilar nodes	Left adrenal	6th rt. rib 3 & 7th left ribs, skull, both femurs	None	Pleura, peritoneum, mesentery, omentum

(45 per cent) of the patients in this series noted a weight loss of 10 pounds or more. Less frequently encountered symptoms are hoarseness, clubbing of the digits, and edema of the face and neck when there is compression of the superior vena cava or innominate vein.

Bronchogenic carcinoma notably metastasizes to the brain, and cerebral symptoms are often the patient's only presenting complaint. Twenty per cent of the patients in this series were admitted because of neurologic signs and symptoms. (See Table II.)

Most workers agree that the time interval between onset of specific symptoms and establishment of the diagnosis is short. Tinney (15) found that an average of 8.5 months elapsed from onset of symptoms until confirmation of the diagnosis. Rarely does a patient live longer than one year following diagnosis. In the University of Maryland series the average length of time between onset of first symptoms and death was 5.8 months, the shortest interval being three weeks and the longest definite interval two and one-quarter years. (See Table I—"Duration.")

TABLE II

Occurrence of Subjective Symptoms

SYMPTOM	NUMBER OF INSTANCES
Cough:	
Non-productive	11
Productive	10
With hemoptysis	10
Dyspnea	15
Thoracic Pain:	
Chest only	12
Chest and one arm	4
Chest and both arms	1
Weight loss	21
Hoarseness	1
Hiccoughing	1
Edema:	
Face and neck	1
Abdominal	1
Ankle	1
Cerebral symptoms only	9

Over 50 per cent of all cancers of the lung are being diagnosed clinically, but in the majority of cases, the diagnosis comes too late for effective treatment. While it is unanimously agreed that the only hope for successful treatment lies in early diagnosis, a paucity of "early symptoms" exists. Complete education of the general practitioner toward the routine use of bronchoscopic and roentgenologic examinations of the patient with a "cigarette cough," vague thoracic pain, minimal hemoptyses, "asthma" of undetermined etiology, "chronic bronchitis," and "angina" would be a major step in this direction.

For the case presenting definitely suggestive symptoms, several methods of investigation, in addition to the primary application of physical diagnosis, are available. Roentgenographs lead directly to the diagnosis in approximately 40 per cent of cases; in an additional number, the roentgenologist is able to suggest the presence of lung neoplasm, although the lesion is obscured by other coexisting conditions such as lung abscess, pneumonia, tuberculosis, pleural effusion and aortic aneurysms (15).

All patients with a clinical impression of lung malignancy warrant a bronchoscopic examination. The bronchoscopic characteristics of carcinoma of the lung are variable so that diagnosis should depend largely on biopsy and histologic study. A single negative report does not exclude malignancy and repeated biopsies should be made.

Needle biopsies as a diagnostic measure are condemned strongly by Ochsner and Rienhoff (34, 42), as being both uninformative and dangerous. The method is applicable only to tumors situated in the periphery of the lung and is considered extremely hazardous in that cancer cells may be implanted along the course of the needle. Other perils cited by Tripoli and Holland (47) are those of air embolism, infection of the pleural cavity, hemorrhage and spontaneous atelectasis. The examination of the cell sediment of serous effusions for tumor cells is worthy of mention. A study of tumor cells in serous effusions by Honigman (19) in the University of Maryland laboratory revealed 27 instances in which pleural fluid and one instance in which peritoneal fluid were examined; malignant cells were found in six cases and no malignant cells in twenty-two cases. In the presence of serous effusions, this relatively simple procedure may prove profitable as an accessory diagnostic aid. Carcinoma cells in sputum have been regarded usually as a rarity. Gowar (10) in an investigation of 93 cases of bronchogenic carcinoma found 36 cases with proved growth and a positive sputum, and 27 cases of proved growth with negative sputum.

A final method of diagnosis which is gaining in popularity is that of exploratory thoracotomy. This procedure is justified in those cases in which the presence of bronchogenic carcinoma is strongly suspected but has not been proved pathologically. At the same time, operability of the lesion may be established. Exploratory thoracotomy is described as a simple operation, offering fewer discomforts to the patient than exploratory laparotomy (37, 38).

In the University of Maryland Hospital series a correct clinical diagnosis was made in 23 of the 45 cases, or 51 per cent. (See Table I.)

TREATMENT

Methods of treatment available to the patient with bronchogenic carcinoma are instituted with the greatest pessimism. Radiation of the tumor offers but palliative results. The brief period of improvement experienced by some following roentgen ray therapy results from the effect on the inflammatory reaction which is consistently present.

Fulguration of the tumor endoscopically has been discarded almost completely because of the impossibility of satisfactory excision and the risk of hemorrhage.

The bronchoscope plays an important part in therapy in the aspiration of infected material from suppurative lesions which occur distal to the growth. Dilatation of the bronchus to facilitate drainage is accomplished also through the bronchoscope.

Intrabronchial use of radon has proved more harmful than useful in Brock's (4, 5) experience. The purpose of radon seed implantation is to allow a blocked bronchus to become free for drainage with possible subsidence of infection. Where there is extensive hilar or mediastinal involvement, use of radon is scarcely indicated as death is inevitable.

The only treatment of bronchogenic carcinoma which offers any hope to the patient, however small, is the surgical removal of the involved portion or of the lung. Lobectomy as the treatment for lung tumor was initiated following introduction of lobectomy for bronchiectasis by means of the one stage tourniquet technique of Shenstone and Jones in 1930. Those cases, however, in which the tumors were related to the larger bronchi were not suitable to treatment by amputation of a lobe distal to a tourniquet. In addition a more careful study of the lymphatic distribution revealed an intimate relation of the lymphatic fields from lobe to lobe, so recurrences following lobectomy were inevitable.

In April, 1933 Evarts Graham removed an entire left lung for a carcinoma by a modified tourniquet amputation. The first one stage, deliberate dissection pneumonectomy for tumor was performed by Rienhoff in July, 1933. Since then the accepted standard surgical procedure for bronchogenic carcinoma has been removal of the entire lung and adjacent lymph glands after dissection and ligation of the main vessels and bronchus (5, 42). Bronchoscopy aids the thoracic surgeon in localizing the lesions and in determining the operability of a given tumor. Surgical removal is precluded if the growth is situated at the carina or extends into the trachea or if the bronchus is fixed, indicating mediastinal involvement.

The presence of evident clinical metastases is an obvious contraindication to surgery.

PATHOLOGIC FINDINGS IN UNIVERSITY SERIES

Warner (48) presented an adequate pathologic study of bronchogenic carcinoma in the first survey of cases from the Department of Pathology, University of Maryland. A review of the literature since that time reveals

TABLE III

Incidence of Primary Lung Carcinoma According to Color, Sex and Age

	NUMBER OF CASES
White male	34
White female	3
Colored male	7
Colored female	1
30–39 years	5
40–44 years	6
45–49 years	4
50–54 years	11
55–59 years	6
60–69 years	8
70–79 years	5

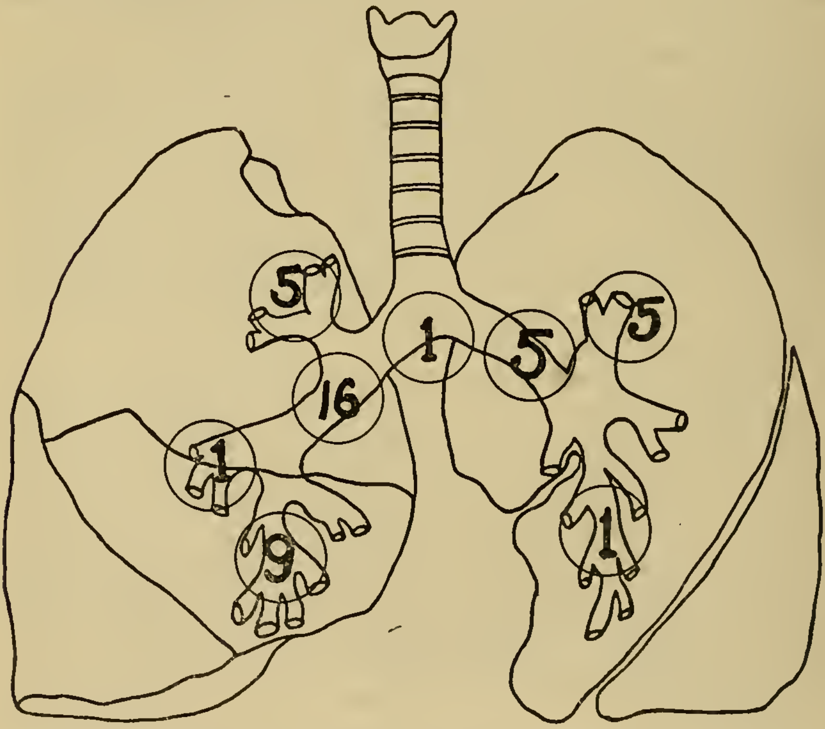

FIG. 1. Sites of Origin of Primary Growths

Right major bronchus—16
Right upper lobe bronchus—5
Right middle lobe bronchus—1
Right lower lobe bronchus—9

Left major bronchus—5
Left upper lobe bronchus—5
Left lower lobe broncbus—1
Bilateral, diffuse—1

no new information on the subject. In the original series no tumors of the adenocarcinoma type were encountered, whereas in the present series it occurred frequently. This tumor usually occupies a peripheral position in the lung, originating in the lobar bronchi or smaller divisions, and metastasizing early.

In this series of 45 cases, 34 occurred in white males, 7 cases in colored males, 3 cases in white females, and 1 in a colored female. The average age incidence was 52.5 years, the youngest case being 31 years of age and the oldest 78 years. (See Table III.)

The right bronchial tree was involved in 32 instances and the left in 11 instances. (See Fig. I.) Histologically the tumors were of the squamous cell type in 18 cases, the small cell type in 15 cases, and the adenocarcinoma type in 12 cases. Secondary lesions in the lung which occurred were abscesses 9, atelectasis 11, bronchiectasis 12, pneumonia 5, pneumonitis 3, empyema 1, and bronchopleural fistula 1. No secondary lung changes were found in 20 cases. Regional metastases occurred in 32 cases. (See Table IV.) Metastases were found in the liver in 16 cases, in the pancreas in 6 cases, and in the spleen in 4 cases. The gall bladder, stomach and colon were metastatic sites in 1 case each. The adrenals were involved in 12 instances and the kidneys in 5 instances. Bony metastases were noted in 13 cases. The brain was removed in 38 cases, 15 of which showed cerebral metastases. Other prominent sites were the pericardium in 9 cases and the omentum and peritoneum in 4.

Eleven cases presented no evidence of either visceral, bone, or brain metastases; 5 of these growths were squamous cell in type, 4 were small cell, and two of adenocarcinomatous pattern.

CONCLUSIONS

1. The rate of diagnosed lung cancer is increasing.
2. Specific diseases or conditions producing chronic irritation of the lung have not been proved to be of etiologic significance.
3. The majority of cases of bronchogenic carcinoma are being diagnosed too late for effective treatment.
4. Roentgenography, bronchoscopy with biopsy, examination of sputum and serous effusions for malignant cells, and exploratory thoracotomy are methods employed in diagnosis.
5. The treatment of bronchogenic carcinoma resolves itself into surgical removal of the involved lung.
6. Pathologic findings in 45 autopsied cases are presented.

Appreciation is expressed to Dr. C. G. Warner for his suggestions in the preparation of this paper.

TABLE IV

Sites of Metastases of Primary Lung Carcinoma

		NUMBER OF OCCURRENCES
Viscera:		
Liver		15
Spleen		4
Pancreas		6
Gall bladder		1
Stomach		1
Colon		1
Adrenals	Right adrenal	2
	Left adrenal	4
	Both adrenals	6
Kidneys	Right kidney	3
	Left kidney	0
	Both kidneys	2
Regional metastases:		
Mediastinal		18
Hilic		11
Cervical		3
Axillary		4
Retroperitoneal		8
Peripancreatic		8
Pelvic		1
Inguinal		1
Bone:		
Skull		3
Ribs		6
Vertebral bodies		2
Sella turcica		1
Femur		1
Nervous tissue:		
Cerebrum		11
Cerebellum		1
Spinal cord		1
Meninges		2
Other sites:		
Skin		1
Pleura		9
Pericardium		7
Right auricle		2
Abdominal wall		1
Diaphragm		2
Superior vena cava		2
Omentum and peritoneum		4

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THE PATIENT'S PART IN RECONSTRUCTIVE SURGERY*†

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Today, as never before, the traumatic surgeon is confronted with the problem of extensive and severe injuries incurred both in civil and military life. Reconstructive surgery is often necessary because of the loss of tissue which is to be repaired, compensated for, or replaced. Undoubtedly, any consideration of this subject must start with the original injury and deal with the nature of that injury, with the initial treatment, with subsequent treatment, and then approach the actual ultimate reconstruction. The patient's ability to withstand the initial trauma, to hold to a minimum the associated contamination and infection, to keep up his body functions and nutrition, and to keep disuse atrophy to a minimum in the interval prior to final treatment, will affect greatly the degree of success attained by the effort at reconstruction. These preliminary problems will be considered in this paper.

In the cases where tissue is lost at the original injury, reconstruction is an obvious necessity and all treatment will point toward that end. In some patients with minimal initial loss there is further loss resulting from extensive and unreasonable debridement, from poor fracture care, and most often from the effects of severe infection. In these latter cases, improvement in management has reduced somewhat the need for reconstruction and too much stress cannot be laid on this, the preventive aspect of the problem.

Little need be said of the question of debridement, except to state it should be neither too great nor too small. Insufficient excision multiplies the possibility of infection. However, reason should be exercised in the operation so that there is not too great a loss of skin, or unnecessary loss of tendons, nerves or bone. With the use of the proper debridement, open wound treatment at the initial treatment, and a good antibacterial agent, the wound has a good start toward healing. This is the safest primary treatment for a wound; and especially is this true in present day military practice where mobile warfare often has taken the patient many hours away from his first definitive care.

The subsequent care of wounds has been of two types. The first used in this war, the Trueta-Orr method with its continued open wound treatment, is not unsuccessful, but it accepts open wounds and infections which of necessity prolong healing time and exacts its toll in muscle and joint dysfunction. The frequent intervention of chronic sepsis makes it far from ideal. In great contrast to this is the program outlined by Churchill (3) whereby many of these cases were treated successfully by secondary closure during the "golden period" from four to ten days after wounding, with reported 95 per cent successes. Under this program the patient receives the same initial care as previously and is speedily removed to a general hospital, where after a day's rest he is taken to the operating room and the wound is inspected. If it is clinically clean, secondary closure is done. Penicillin is administered from the time of arrival to about the fifth postoperative day. Blood loss is replaced by whole blood transfusions. According to his report success has been obtained in more than 95 per cent of the cases reported, with healing in three to four weeks following injury. It is to be hoped that follow-up studies will confirm the early reported successes in this program. The value of converting a compound fracture to a simple one in so short a time may be appreciated by all.

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* From the Halloran General Hospital, Staten Island, New York.

† Read before the New York Academy of Medicine, March 16, 1945.

In cases where infection persists, and especially where chronic sepsis has become established, the problem is more difficult and complicated. It is generally agreed that before bone reconstructions are done all wounds should be healed and infection removed effectively. This is sometimes a real problem.

In his treatise on wound healing Whipple (12) reported concisely and clearly the many factors concerned in this process. As local factors he enumerated the following: 1. The amount of killed or damaged tissue. 2. The vascularity and integrity of the blood flow. 3. The amount and character of the exudate in the wound space and tissues bordering the wound. 4. The number and character of infectious organisms in the wound space and bordering tissues. 5. The number and character of the foreign bodies to be extruded or encapsulated.

As systemic factors he included: 1. Age of the tissues. 2. The state of normal hydration which is determined by water, electrolyte, and protein balance in the blood. 3. Normal nutritional balance in which protein deficiency retards and high protein diet accelerates wound healing, and high fat diet retards wound healing. 4. Vitamin balance, particularly for the effect of vitamin C in the formation of the fibroblast and the transformation of fibrous to collagen fibers. 5. The state of the general circulation and condition of the blood in which poor circulation and severe anemia delay wound healing.

In surgical cases Mulholland, Co Tui, Wright, and Vinci (8) pointed out that hypoproteinemic patients are poor risks and show impaired wound healing because of the aggravation of the low normal plasma protein concentration by the toxic loss of nitrogen and the starvation incident to operation.

Cuthbertson (4) has pointed out a considerable loss of nitrogen, sulfur, and phosphorus in the urine of otherwise healthy individuals who have received moderate or serious traumatic injury, beginning the day after injury and reaching a maximum about ten days later. The greater the injury the greater the loss. He noted also a wasting of muscle and bone out of proportion to that expected with immobilization and interpreted this to mean that the body was catabolizing its reserves to meet the exigencies of repair and maintenance. He wrote, "The ingestion of diets rich in first-class protein and of high caloric value by persons suffering from the fracture of one or more of their long bones as a result of direct violence, modifies considerably the marked loss of body protein which normally occurs under such circumstances." However, he made the interesting statement that high protein diet alone does not produce positive nitrogen balance.

Ravdin (10) has demonstrated the effect of hypoproteinemia on wound healing, with a high incidence of wound disruption, and with complete control by large amounts of plasma.

Kerwein (5) proved the failure of callus formation in experimental fractures in rabbits on starvation diets.

Rhoads (11) similarly pointed out the slowness with which bony callus is formed after experimental fracture in dogs depleted of plasma and proteins. He reported that not only is the plasma protein deficient but also the labile protein reserve. In addition he suggested that the serum calcium may be associated with the serum protein.

Murray (9) has stressed the careful preparation and control of the patient's over-all condition, both systemic and local, in his paper on the "Basic Problems in Bone Grafting." He pointed out that the condition necessary for a successful bone graft is a healthy bed of undifferentiated connective tissue with a good minute circulation, so that the proper *p*H is maintained under which normal phosphatase activity causes calcium and phosphorus to be laid down promptly in this new undifferentiated connective tissue bed. He stated this optimum local condition is brought about by the control of infection, by care of nutrition and improvement of anemia, by plastic procedures in removing all old scars, by preservation of muscle function, and by use of the proper graft and correct insertion of the graft.

In patients treated at the Halloran General Hospital Lyons (6) reported careful studies on the conditions of those with infected compound fractures. In these cases he noted almost constant findings of:

1. Weight loss, as great as sixty-five pounds.
2. Loss of appetite with low food intake.
3. Anemia.
4. Low blood pressure.
5. General debility.

Further study showed the patients to be invariably in negative nitrogen balance and usually with reduced blood volume, often as much as two liters of whole blood. He also reported an abnormally high interstitial fluid volume, a finding difficult to understand in view of the decreased blood volume and the significance of which is not understood.

Thus it has been shown abundantly that patients with infections and with poor nutritional and circulatory status are slow in controlling their infections, are poor surgical risks, heal their wounds poorly, and would therefore be undesirable candidates for reconstructive procedures. A program has been developed for rapidly improving the patient's general condition and circulation, thus eliminating the infection and healing his wounds (1, 7).

A prime requirement in treating these patients is a good antibacterial agent. The sulfonamides are satisfactory but still fall somewhat short, and in addition their toxic effects are rather undesirable. In penicillin an almost ideal agent has been found. It is nearly completely nontoxic for all clinical purposes. Although penicillin does not inhibit all organisms it is active against the chief offenders: the staphylococci, streptococci, and the clostridia. It is also active in mixed infection. Since these organisms are the usual pathogens in most wounds, penicillin proves itself to be an efficacious adjunct in the program of treatment. The dosage is maintained at from 120,000 to 200,000 units per day. The usual route of administration is the intermittent intramuscular one, but the continuous intramuscular drip has been efficacious and less annoying to the patient.

However, penicillin will not control infection in wounds with poor drainage or when foreign bodies and sequestra are present. Surgical intervention is required to remedy these conditions, but before this can be performed safely the "unsteady state" described by Lyons (6) must be treated. Penicillin is administered preoperatively to lessen the toxic effect of the infection. Whole blood transfusions are given in whatever quantities are necessary, often several liters being required. It may not always be possible or even advisable to make blood volume studies on all patients. If it is impractical to carry out these studies the clinician must use what laboratory work is available along with his best judgment in determining how much blood will be required by the patient under treatment. If an error is to be made it should be on the side of giving too much blood rather than too little. The patient usually will improve noticeably under this treatment and will start to eat. This improvement in appetite under penicillin administration undoubtedly results from a decrease of the toxic effects of infection. Positive nitrogen balance is soon obtained without supplementary measures. Within a few days the patient should be ready for surgical treatment.

At operation all sequestra, foreign bodies in the wound, dead tissue, and excessive granulations are removed and the wound is well exteriorized. It is packed open and the dressings are not disturbed for about five days in order to avoid postoperative bleeding. Penicillin is continued during this period until it is seen that all cortical bone is covered and the wound and surrounding tissues look healthy, after which it is discontinued. Packs saturated in penicillin solution are kept in the wound to encourage granulation from the base; the wound is allowed to close from its depth or a secondary closure may be done. Whole blood and plasma transfusions are given in the early postoperative period to replace the blood lost at operation, and the patient is allowed to resume his diet as early as possible. A high caloric, high protein diet is prescribed for him and he is given to understand that it is part of his treatment. Because of the increased appetite enjoyed during penicillin therapy no difficulty is met in feeding these patients diets ranging between 2500 to 3000 calories, with a minimum of 150 grams of protein per day.

Under this program it has been possible to heal severely infected wounds in a rather short time. In addition, the patient has a fairly rapid return to near normal weight with a corrected blood content.

It is the author's practice to treat all skin defects, especially if reconstruction procedures are necessary. The excision of surface scar tissue later affords good skin covering for the bone graft. Furthermore, the excision of thick deep scars is felt to be necessary in order to prepare the bed for a bone graft. The accelerated formation of new bone has been noted following such excision of soft scar tissue because of obvious improvement of the local minute circulation, a factor stressed by Murray (9) in his principles of the basic problems in bone grafting. The plastic surgery involved in these cases will be discussed in a paper to follow, therefore the subject will not be pursued here.

All during these stages of treatment the other factors concerned in the case are managed appropriately. Fractured parts are kept immobilized in the best possible alignment and length to avoid later the dysfunction and disability which would result should shortening and deformity ensue. This is done by appropriate means either by soft dressings, splints, plaster casts, traction, or combinations of these methods as indicated. Muscle and joint functions are maintained by appropriate physiotherapy, occupational therapy, exercise splints, and other means. The patient is likewise kept in good general condition both mentally and physically by a reconditioning program, fitted to his capabilities, which operates during his hospital stay.

Throughout the entire course of treatment one must always be mindful of the possibility of infection. In this hospital the patient receives a booster dose of tetanus toxoid if he has been properly immunized, as are all men in the service, prior to any secondary operation in the site of an infected wound. Penicillin is given prophylactically at the time of the reconstruction to insure against a recurrence of the old infection. The patient is started on penicillin forty-eight hours prior to the operation and this medication is continued for about four or five days postoperatively. With this practice it has been found safe to reduce the usual waiting interval rather considerably. Carpenter and Rosenfeld (2) at this hospital have determined three months to be a desirable period in many cases, all other factors being favorable. This short interval is advised only if a good antibacterial agent such as penicillin is used to insure against recurrent wound infection at the site of the graft.

As a result of this program of control of the patient's general and local condition, the patient presents himself to the reconstruction surgeon in optimum condition. With his general nutritional status and circulatory system in good order he is ready to supply the necessary building materials for the repair of tissues. Through the control of infection by early wound healing and later scar excision, and with the judicious use of penicillin as an antibacterial agent, the danger of infection is largely eliminated. With the control of local factors such as alignment and length of the fractured bones, with establishment of the proper conditions in a healthy bed for the contemplated bone graft by scar excision and physiotherapy, and with a good skin covering provided for the graft area by plastic surgery, the local condition is most favorable for the success of the reconstruction. A personalized reconditioning program keeps him in good general mental and physical condition and avoids the hospital fatigue so detrimental to a patient. He is thus in readiness to supply his part in recovery. The remainder is largely up to the skill and care of the reconstruction surgeons dealing with his case.

SUMMARY

Thus, under a program which insists upon good initial handling of the patient by efficient surgical treatment, blood replacement, and care of infection, early wound healing may be accomplished in many cases. Such a program tends to prevent additional tissue loss resulting from the unavoidable damage incident to persistent infection. Accordingly, some patients may not suffer any loss which later would require reconstruction, and others that have extensive loss may have a good start toward repair. Where infection and sepsis has intervened, a program is laid down for the rapid replacement of deficient blood volume, improvement of nutrition, and care of infection by penicillin therapy and operative cleansing of the wound area. The revision of scar tissue and soft parts is an essential prerequisite to reconstructive surgery. A good reconditioning program not only renders the patient in excellent general mental and physical condition, but this same program insures that the extremity is locally in optimum condition for any reconstruction surgery. Without this proper preparation and conditioning of the patient, excellent efforts by the reconstruction surgeon may fall far short

of the expected results. Only by careful control of all the major factors outlined will the patient be enabled to contribute his full share to the success of his reconstruction

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CURARE IN ANESTHESIA*†

SAMUEL ROCHBERG, B.S. M.D.

Curare is a word that evokes weird pictures in one's mind—warfare with Indians blowing and shooting poisoned arrows, and their enemies, when struck, dying quickly, horribly and silently. In the latter part of the 16th century, Sir Walter Raleigh brought some curare to England. Many writers have used curare as the keystone of their mystery thrillers. However, science has conquered this terrifying drug, and the art of medicine is putting it to many uses.

Curare is derived from several varieties of *strychnos* plants and is obtained by brewing their stems, roots, bark and leaves (1). The result is a resinoid mass that is soluble in cold water and dilute alcohol. Alkaloids, whose chemical structure is unknown, are the principle ingredients (1).

Curare acts principally on voluntary muscles by interfering with the acetylcholine mechanism of transmission of nervous impulses at the myoneural junction. Within minutes after an intravenous injection, the skeletal muscles become paralyzed; the intercostal muscles and the diaphragm are affected last. Consequently, individuals poisoned by curare die from oxygen lack and from cardiac failure as a result of hypoxia. Curare does not seem to have any direct effect upon the heart or medullary centers. When the effects of curare begin to wane, the diaphragm and the intercostal muscles are the first to recover. The activity of the smooth muscles of the gastro-intestinal tract is diminished by curare (2).

Curare is not very effective when taken orally. It is partly destroyed by the liver, and the remainder of the drug is eliminated, unchanged, by the kidneys.

Physostigmine and prostigmine may be employed as antidotes.

Curare is marketed by E. R. Squibb and Co. as *Intocostrin*. According to this firm: "It is free from toxic substances in quantities sufficient to have clinical significance."

Curare is used in mental diseases in conjuction with shock therapy to prevent fractures and to diminish the severity of the convulsions. It has also been useful in neuropsychiatry in spastic diseases and as a diagnostic aid in myesthenia gravis.

Griffith (3) first reported its use in anesthesia. He was very impressed by the abdominal relaxation that was produced by curare. The reports that followed (4–13) conveyed the same impression. Curare has been used in

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*From the Department of Anesthesiology, Sinai Hospital, Baltimore, Maryland.

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conjunction with all the inhalation and intravenous anesthetic agents to produce abdominal relaxation. The intravenous route is the most effective one to use. It can also be given intramuscularly, but then one must wait ten to fifteen minutes instead of ten to fifteen seconds for the desired result.

The author has used curare as an aid in producing a flaccid abdomen during inhalation anesthesia in sixty cases. The results have been gratifying. Curare has been frequently employed in upper abdominal surgery. This has given the surgeon ample relaxation, nor has it been necessary to resort to prolonged deep anesthesia with its attendant operative and postoperative problems. The elderly patients, in particular, have benefited, for the combination of a light anesthesia and curare allows many of them to be sent back to their beds in an almost conscious state. The sooner elderly patients awake and get out of bed, the fewer will be the postoperative complications.

Curare has been used when laryngospasm, resulting in an inadequate depth of anesthesia and a tight abdomen with extruding intestines, was present. The laryngospasm disappeared, the abdomen became relaxed and quiet, and the surgeon was able to proceed.

Upon one occasion when a spinal anesthesia was wearing off, causing some difficulty in the abdominal closure because of the muscular rigidity, curare solved this problem very rapidly.

It has been the practice of the author to administer 40 units as the initial dose. In elderly patients 20 to 30 units is used. After several minutes, more is given, if needed, in 20 unit dosage. Curarization, in effective dosage lasts thirty to forty minutes. If the respirations become unduly depressed, the patient's breathing is aided by gentle rythmical pressure on the breathing bag. The author has never had to use prostigmine as an antidote. However, on one occasion, prostigmine was injected to observe the effect. Within 30 to forty seconds there was a noticable increase in the tidal volume.

Patients require greater amounts of curare during cyclopropane anesthesia than with ether anesthesia to produce adequate relaxation. This probably results from the depressant effect of ethyl ether upon the myoneural juction.

In several cases a moderate drop in the blood pressure was observed. This was only temporary, and within ten minutes the blood pressure had returned to its normal level.

CONCLUSION

Curare is a valuable drug in anesthesiology. However, it should not be used indiscriminately, nor should it be employed by anyone unfamiliar with the physiology and technique of controlled breathing.

The place of curare in medicine has not yet been fully evaluated. It can be used more often in the reduction of fractures and dislocations. The thought that curare will relieve smooth muscle spasm needs investigation. In addition, its use in obstetrics may offer many possibilities.

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A BRIEF HISTORY OF ROENTGENOLOGY IN BALTIMORE*

HENRY J. WALTON, MD.

Professor William Conrad Roentgen announced his discovery of x-rays in December, 1895. Almost immediately, physicists and physicians all over the world began experimenting with these unknown rays. In Baltimore, Dr. Henry A. Rowland, physicist at Johns Hopkins University, and Dr. W. C. A. Hammel, at the State Normal School, assembled apparatus in their respective laboratories and began experimenting.

Dr. Henry Chandlee, who later became roentgenologist at the University Hospital, working with Dr. Rowland in his laboratory at McCoy Hall, produced some remarkable roentgenographs of skeletons of live animals, one of the finest being that of a coiled snake. They were probably the first to ever visualize a fetal skeleton in utero.

Dr. John C. Hemmeter, professor of gastro-enterology at the University of Maryland, working with Dr. Hammel, at the State Normal School, began experimenting on the visualization of the human stomach, after administering drugs known to be opaque to the x-rays. As early as April, 1896, four months after Roentgen's announcement, Dr. Hemmeter wrote an article entitled *Photography of the Human Stomach by the Roentgen Rays*, which was published in the Boston Medical and Chirurgical Journal in June, 1896. Although Dr. Hemmeter was the first physician to ever use the x-rays in gastro-enterology, he was never given credit for this in America, which made him feel so embittered that he never got over it.

The first x-ray apparatus in Baltimore was installed at the University Hospital during the summer of 1896. The apparatus consisted of a small coil, storage batteries, a small tube and a hand fluoroscope. The following editorial was published in the Bulletin of the University of Maryland, Dec., 1896, Vol. 1, Page 133:

> "The x-ray apparatus which has been for sometime in use at the University Hospital has a constantly growing field of usefulness. Its aid is frequently invoked in various departments, both medicine, and surgery, and its habitual use develops a new and distinct skill which is of increasing value and importance."

And in the May and June issue of the Bulletin, 1897, Vol. 2, Page 70, there is a reference to the use of x-rays in locating a foreign body:

> "Dr. I. R. Trimble brought a patient to the University Hospital who was suffering much pain in the end of the right forefinger which was lacerated. She gave a history of

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*Speech made by Dr. Henry J. Walton at the Testimonial Dinner given to him by the faculty on the occasion of his retirement as professor of roentgenology of the School of Medicine, University of Maryland.

having run a cambric needle into this finger two years ago. The finger was examined by means of the x-ray apparatus and a foreign body was located a little in front of and somewhat below the distal joint of the finger. The hand was thoroughly cleansed and under local anesthetic, the finger was opened and a piece of needle about one-quarter of an inch in length, much oxidized, was removed."

Dr. Henry Chandlee was the first physician in Baltimore to install x-ray apparatus in his private office for use in his own practice and in consultation with other physicians. Dr. Chandlee was a general practitioner and surgeon. He was a skillful mechanic, and his hobby was photography, so it was only natural for him to become interested in Roentgen's new discovery. In 1902, Dr. Chandlee went to England and Germany. He returned highly enthusiastic about what he had seen abroad and brought back with him a new x-ray tube and a 10 mg. plaque of radium, with which he later successfully treated many superficial epitheliomas.

In the fall of 1896, Dr. Harvey Cushing entered the Johns Hopkins Hospital as a house officer, and it is said that he made the first x-ray examination at the Hopkins with a huge hand operated static machine. Its type soon became obsolete. In 1898, Dr. Clemont Penrose operated the x-ray apparatus at the Hopkins.

Dr. Frederick H. Baetjer graduated from the Johns Hopkins Medical School in 1901. He at once became interested in this new diagnostic procedure, and was placed in charge of the hospital x-ray apparatus. From the start, Dr. Baetjer devoted his entire time to this rapidly developing branch of medicine. In 1902, he went abroad and studied under Dr. Albers Schonberg in Hamburg, and Dr. Immelman in Berlin. On his return to this country, he was appointed "actinographer" at the Johns Hopkins Hospital, a title coined by Dr. Henry Hurd, superintendent of Hopkins, and not at all relished by Dr. Baetjer, but the terminology was not changed until 1913, when the present nomenclature was universally adopted. Dr. Baetjer's logical mind combined with his natural skill and the knowledge and experience gained by almost unlimited material at his disposal, very early made him a leader in roentgenology, not only in Baltimore, but throughout the country. Like scores of others who worked with roentgenology in those early days, before the need of protection was realized, he suffered many injuries to his hands, face and eyes, which required numerous operative procedures. In spite of untold suffering and many physical handicaps caused by his burns, he never complained or lost interest in his work. His sense of humor and jovial disposition won for him a host of friends and he never tired of telling or listening to a good story.

Dr. George Adoph Christian Deetjen first became interested in the roentgen rays while working with Dr. Chandlee in 1900. The following year, he purchased apparatus and started to make roentgenologic examinations in his own office on Franklin Street. In 1902, Dr. Deetjen went to Germany to further his study under Dr. Albers Schonberg. He brought back to this country with him a 27-in. Wehnelt interrupter which was the most powerful roentgen ray machine made at that time. He used it in his office for many years and was able to reduce the time of exposure for the thicker parts of the body from fifteen to five minutes. Dr. Deetjen was the first roentgenologist in Baltimore to visualize stones in the kidneys. This was in 1901 and the following year he made a diagnosis of brain tumor, which was confirmed by autopsy.

Dr. Howard A. Ashbury started to do roentgen ray work at his office and at the Hospital for Crippled Children in 1903. He was later appointed roentgenologist at St. Joseph's Hospital. In 1914, Dr. Ashbury read a paper before the American Roentgen Ray Society on the diagnosis of gastric ulcer by the crater sign. This was so severely criticized in a discussion of his paper that he seldom attended any of the meetings of the Society thereafter. Later, his observation was corroborated, and today, it is recognized as one of the most important roentgen signs in the diagnosis of gastric and duodenal lesions.

Dr. Albertus Cotton did some work at the Mercy Hospital as early as 1902, but the hospital had only a very small coil and the machine was used very seldom, and then only for bones.

In 1901, Dr. Thomas R. Brown did roentgenologic work at the Howard A. Kelly Sanatorium. Dr. Brown had studied the rays abroad with Drs. Holzknecht and Swartz. He later did the gastro-intestinal roentgen ray work in the clinic at the Johns Hopkins Hospital.

Although the roentgenologic apparatus at the University Hospital had been in use since 1896, it was not until 1900 that an actual department was organized. Dr. Compton Riely was placed in charge. A new Snook jumbo-coil and mechanical interrupter were purchased and placed on the third floor in two small rooms to the rear of the surgical amphitheater. There was no protection provided for the operator and by 1903 Dr. Riely began to notice skin changes on his hands from repeated exposures to the roentgen rays and he resigned, and confined his practice to orthopedic surgery.

Dr. Willis Bryan Fitch was then put in charge, but he left at the end of one year on account of poor health.

Dr. Nathan Winslow was then appointed roentgenologist, and a more powerful roentgen ray machine was installed. With this apparatus, Dr. Winslow was able to make roentgenographic examinations of hands in one minute, of the chest in three minutes and of the kidneys in from eight to ten minutes. By 1907, Dr. Winslow noticed that the skin on his face and hands was showing the effects of over-radiation, and he resigned.

Dr. Howard A. Ashbury was then appointed roentgenologist and better protection was provided. Dr. Ashbury had a large office practice, besides being in charge of the roentgenologic departments of St. Joseph's and Hebrew Hospitals. He was too busy to devote as much time to the Department at the University as was necessary and after serving two years, resigned.

In 1911, Dr. Henry Chandlee was appointed roentgenologist and he asked that I be made his assistant, as he did not feel that he could give as much time to the hospital as the work might demand. As long as Dr. Chandlee lived, we worked there on alternate days. At that time, the Department was only open for an hour or two in the afternoons.

It had been my intention to eventually devote my entire time to surgery. In preparation for this, I had spent one year abroad. Like so many others who worked with roentgen rays in those early days, and being stimulated by Dr. Chandlee's enthusiasm and diagnostic ability, I very soon became more and more interested in the rapidly expanding uses of the rays in medical diagnosis. Feeling the need for additional training, I called on Dr. Baetjer for advice. Subsequently, I was appointed as assistant in the roentgenologic department at the Johns Hopkins Hospital, where I worked for two years. Upon the death of Dr. Chandlee in 1916, I was made head of the Department of Roentgenology at the University of Maryland, and resigned from Hopkins.

It was my good fortune to have been tutored by two such enthusiastic teachers as Dr. Baetjer and Dr. Chandlee. Dr. Baetjer, was an able scientist who entered his specialty soon after graduating from Medical School. He was a man of the keenest perception, whose powers of observation and deduction often seemed uncanny to the crowd of students and physicians who assembled in the department at twelve o'clock each day to be inspired by his interpretations of the roentgenographs placed on the viewing box before him by one of his assistants. Dr. Chandlee, also a teacher of ability, had practiced medicine for many years before taking up the specialty of roentgenology. He could not separate the clinical aspects of medicine from the interpretation of films. The University of Maryland owes Dr. Chandlee a great debt of gratitude. If there is one factor that stands out above all others responsible for the development of the Roentgenologic Department at the University of Maryland; it is the teaching of Dr. Chandlee, that the practice of roentgenology could not be separated from clinical medicine, and that the same relationships should exist between the radiologist and his patient that exists in all the other specialties.

In order to carry out this principle of always having a roentgenologist in the department to interview patients referred for examination, in 1923 I secured the assistance of Dr. Eugene L. Flippin, who remained at the hospital in the afternoons when I went to my office; thus, creating the first roentgenologic Department in Baltimore to be operated on a full time basis.

In 1936 Dr. Flippin left and Dr. Walter L. Kilby was appointed Assistant Roentgenologist. Upon my resignation Dr. Kilby was made Professor of Roentgenology at the University of Maryland and Dr. Charles N. Davidson was appointed Assistant Roentgenologist.

In this brief account of the history of Roentgenology in Baltimore I have mentioned some of the men who have taken part in the remarkable development of this new branch of medical science during the past fifty years. Roentgenology is now firmly established as an important medical specialty and who can predict what new developments will take place in Roentgen diagnosis and therapy during the next fifty years.

AN OBSTETRIC CASE REPORT*†

A 21 year old colored, registered, multipara was admitted at term in early labor during her third pregnancy. Her first child had died at six days of age from a "blood clot on the brain" five years ago. Her second child, weighing seven pounds at birth, was delivered at home and was now four years old and well. A diagonal conjugate of 11.5 cm. was found prenatally. Contractions became strong but little progress was made—the head remaining at the pelvic inlet and the cervix 2 to 3 cm. dilated for approximately twelve hours. The membranes ruptured spontaneously at this point. Roentgen cephalopelvimetry taken at this time was reported to show "a large baby with definite disproportion"; presentation was LOA, and over-lapping of the cranial bones could be seen in the films; and there was no demonstrable hydrocephalus or other anomaly. A clinical examination revealed an acute pubic arch, transverse ischial diameter of the outlet 8.0 cm., posterior saggital diameter 6.0 cm., and suggestive over-riding by careful palpation. After sixteen hours of labor, pains were regular and strong, the patient and her baby were in good condition. A rectal examination revealed the cervix to be about 4 cm. dilated and thin, but the head could be dislodged by upward pressure on the caput. What should be the treatment of this case?

DISCUSSION

Here was a patient who had had two previous vaginal deliveries, and who appeared to have suggestive disproportion. It is known that the size of the baby usually increases somewhat with each pregnancy, so that with the contracted pelvis one had to think of actual disproportion and possible abdominal delivery. On the other hand, it is well known that negro babies are usually smaller in size, especially with regard to the cephalic diameters, and that their heads are readily compressible. The roentgenologic report was so unequivocal that considerable weight had to be given to it, and clinically there was borderline disproportion. However, in view of the multiparity of the patient and her excellent condition, it was decided to pursue a course of "watchful expectancy" for a few more hours.

Actual treatment: While the films were being studied and treatment discussed, the patient made very rapid progress. A further examination revealed the cervix to be fully dilated. She was transferred to the delivery room just in time to be delivered spontaneously, after seventeen hours of labor, of a full term, living, male child weighing 6 pounds 10 ounces and in excellent condition. There was a large caput and considerable moulding of the head. There were no cervical lacerations, and only a slight vaginal mucous membrane laceration.

This case serves to emphasize the facts that ultimately clinical judgement should be the determining factor in deciding the mode of treatment in any case, and that a roentgen examination should remain an adjunct.

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*From the Department of Obstetrics, School of Medicine, University of Maryland.

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POSTGRADUATE COURSES OF THE SCHOOL OF MEDICINE, UNIVERSITY OF MARYLAND

The School of Medicine of the University of Maryland is prepared to offer the following courses to suitably qualified medical graduates, particularly those returning to civilian practice from recent service with the Armed Forces. All inquiries and applications should be addressed to the Office of the Dean, School of Medicine, University of Maryland, Baltimore 1, Maryland.

I. A CONTINUATION OR REFRESHER COURSE IN GENERAL MEDICINE

The Medical Faculty offers an eight week course ("refresher") to physicians planning to resume general practice. The course will begin April 15, 1946 and end June 8, 1946. It will not be given to less than fifteen, and the enrollment will be limited to thirty. Although open to graduates of any approved medical school, preference will be given to veterans who are graduates of the University of Maryland. No examinations or credit of any kind will be awarded since the course is not designed to prepare men for board certification.

Emphasis will be placed upon recent developments in the fields of medicine, surgery, pediatrics, obstetrics, and gynecology. Material will be presented by the staffs of those departments in the form of lectures, clinics and ward rounds, symposia, and conferences (including pathologic) arranged for pertinent subjects. The Departments of Pathology and Bacteriology will cooperate in the clinical teaching; the Department of Pharmacology will give a short series of lectures on recent trends in chemotherapy; and the Department of Physiology will present a series on recent advances in that field of clinical interest.

Letters of application should include: (1) Applicant's name, age, and permanent address; (2) a summary of his military record; (3) name of the medical school from which graduated and the date of graduation; (4) hospital training, and previous medical experience. Students will provide their own living quarters and subsistence. Tuition will be $100.

II. REVIEW IN SURGICAL ANATOMY

The Department of Anatomy offers a fifteen week course in surgical anatomy, open to twelve graduates in medicine who have served not less than a nine months' internship. This course is given in conjunction with the regular sophomore medical course in surgical anatomy, during the second semester of the sophomore year. It consists of lectures on Monday from 2:00 to 3:00 P.M. and on Wednesday from 8:30 to 9:30 A.M.; demonstrations of prosected cadavers will be given on Monday from 3:00 to 5:00 P.M., and on Wednesday from 9:30 to 11:30 A.M. Prosected cadavers will be available for inspection at other hours. A limited number of supervised reading and study hours can be provided by special arrangement. Tuition will be $150.

III. GENERAL PATHOLOGY AND NEUROPATHOLOGY

The Department of Pathology offers the following opportunities for training in general pathology and neuropathology. All courses are arranged upon application and in accordance with existing facilities.

A. Basic training in general pathology in fulfillment of requirements as set up by the American Board of Pathology. Period of training: Full time—one year (minimum), to three or more years.

B. Training in general pathology as a part of the preparation for certification in surgery, the surgical specialties, and internal medicine. Period of training: Full time—six months minimum.

Individuals in Group A and B will receive training in autopsy and surgical pathology, and will be required to do a certain amount of teaching, attend and participate in pathology conferences, and be expected to prepare and publish at least one article or paper during each term of tenure. Requirements for A and B: M.D. degree from an approved medical school, and at least one year of internship in an approved hospital. Two postgraduate students can be accommodated as vacancies occur. Course fees: A, $300; B, $150.

C. Neuropathology. Covers basic studies in diseases of the central nervous sytem, including congenital malformations, neoplastic diseases, inflammations and degenerations, as well as traumatic and vascular lesions. Work shall include the planned study of gross and microscopic material, case studies, and necessary conferences and individual instruction. This course is open to but *one* student at a time. The student should plan to take a review course in neuro-anatomy and neurophysiology concurrent with his work in neuropathology. The course is particularly designed to aid in meeting the requirements of the Specialty Boards in the neurologic sciences.

Requirements: M.D. degree; one year rotating internship; two years' residency or special training in neurology, neurosurgery or psychiatry in an approved institution. Duration of course: Six months—Full time. Fees: $200 plus a laboratory fee of $10. Courses will be given upon application and at the convenience of the student. Qualifications will be considered as a prerequisite for acceptance.

D. Opportunities for the review of pathology in preparation for examinations in clinical specialties as given by the various American Boards. These students will be supervised and given ample opportunity for review. No fixed schedule will be followed. This opportunity will be available *only* to those who are eligible for Specialty Board examinations. Four persons can be accommodated at one time. Length of the review period is to be determined on the basis of previous training in pathology. No charge will be made for the D course in the case of physicians who have had their training in the University Hospital. Graduates who have been trained in other hospitals will be charged on the basis of $25 per month.

IV. GYNECOLOGY AND OBSTETRICS

These departments offer *two* courses designed primarily for the general practitioner. No examinations or credit will be given, and they are not intended as preparation for Specialty Board examintion. They are open to graduates of any approved medical school who have served not less than a nine month internship.

A. Review of obstetrics and gynecology. Eighteen hours of gynecology and eighteen hours of obstetrics per week for twelve weeks, consisting of lectures, clinics, ward rounds, demonstrations (including use of manikin), as well as operations and deliveries, given by the staffs of the Department of Obstetrics and the Department of Gynecology. Work on obstetric and gynecologic pathology will be included. The course is limited to ten, but will be given whenever not less than two applicants present themselves. Tuition $150.

B. Review of gynecology, oncology and female urology. Ten weeks, full time, consisting of lectures, ward rounds, outpatient clinics, and demonstrations of operations. Work in gynecologic pathology will be included. The course is limited to six applicants and will be given whenever a suitable number presents itself. Tuition $125.

MONTHLY MEETINGS OF THE UNIVERSITY HOSPITAL STAFF

The following are abstracts of papers presented at the monthly meeting of the University Hospital staff held on December 20, 1945.

STREPTOMYCIN

Margaret H. D. Smith, M.D.*

The history of the discovery of the new antibiotic streptomycin was discussed, together with a brief outline of its modes of administration, excretion, and toxic manifestations. Streptomycin has been found to be effective in the treatment of certain infections resulting from gram-negative rods, such as tularemia, influenzal meningitis, infections of the urinary tract, but of doubtful value in conditions like typhoid fever and brucellosis.

CHEMOTHERAPY IN TUBERCULOSIS†

Lawrence M. Serra, M.D.

Although the sulfonamides and more recently promin, diasone and promizole of the sulfone group have proved disappointing, progress in tuberculochemotherapy is being made.

Even though its full value is not yet known, streptomycin has exhibited a bacteriostatic effect on pulmonary tuberculosis. Excellent results have apparently been realized in some types of extrapulmonary tuberculosis.

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*Medical Director, Sydenham Hospital.

†From the Department of Medicine, School of Medicine, University of Maryland.

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ONE HUNDRED AND FORTY-SIXTH PROGRAM MEETING

The One Hundred and Forty-Sixth Program Meeting was held on Wednesday, November 28, 1945, at 4:00 P.M. in the Bressler Lecture Hall.

A paper on "Some Physiologic Aspects of the Gallbladder" was presented by Maurice Feldman, Department of Gastro-Enterology, School of Medicine, University of Maryland.

SOME PHYSIOLOGIC ASPECTS OF THE GALL BLADDER*

Maurice Feldman, M.D.†

In 263 consecutive cholecystographic studies there were fifty cases in which the only apparent abnormal finding was a sluggish emptying gallbladder. Standards were ascertained as to the tonicity, shape, and measurements of the normal and abnormal contracting gallbladders. It was found that in the majority of sluggish emptying, noncalculus gallbladders, the contraction was three times less than normal. The factors influencing the physiology of the biliary tract were discussed. The importance of changes in gastric acidity, metabolic disturbances, and allergy was emphasized. In this group of cases the integrity of the gallbladder to concentrate the dye was unimpaired. There was no relationship between the position of the gallbladder and the emptying time. In eighteen of the fifty cases in which a gastrointestinal study was also made, five revealed a small gastric residue. The retarded gastric emptying may possibly play some rôle, but this factor is not significant. The effect of amyl nitrite and octyl nitrite upon the emptying function of the gallbladder revealed no demonstrable change. The clinical significance of the sluggish emptying noncalculus gallbladder as judged by cholecystography must be interpreted as a functional phenomenon. Because of the complex etiologic factors involved in delayed emptying, each case is a medical problem and should be treated individually. Surgical exploration should only be attempted as a last resort, since operation does not relieve the symptoms in many instances.

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*Abstract of the paper presented before the University of Maryland Biological Society on November 28, 1945.

†From the Department of Gastro-Enterology, School of Medicine, University of Maryland.

ONE HUNDRED AND FORTY-SEVENTH PROGRAM MEETING

The One Hundred and Forty-Seventh Program Meeting was held on Wednesday, December 12, 1945, at 4:00 P.M. in the Bressler Lecture Hall.

A paper entitled "Facial and Body Prosthesis" was presented by Carl D. Clarke, Associate Professor of Art, School of Medicine, University of Maryland. A motion picture film on the same subject was shown.

FACIAL AND BODY PROSTHESIS*

Carl D. Clarke

The word prosthesis means an artificial organ, such as an eye, nose, ear, hand, leg, or denture that is used to replace an absent part in the body. Every war has produced wounds that require both plastic surgical repairs and prosthetic appliances. The advent of high explosives and inflammable mixtures and the extensive use of the airplane have increased greatly the necessity for such work. The ravages of disease and the mutilations caused by accidents have constantly supplied patients during peace time who demand prosthetic appliances.

Facial and body prosthetics is divided into two main groups as follows:

1. Prosthesis that are purely of a temporary nature, for cosmetic purposes only, provided to be worn until the defects can be corrected permanently by plastic surgery. Typical examples of such cases are those in which an artificial tip of a nose or a section of a cheek are made to replace, temporarily, the actual parts lost through disease or injury. In such instances plastic surgery may be done later and will obviate the necessity for the prostheses.

2. The second group is comprised of those cases which are beyond the help of plastic surgery. A typical example of this is an artificial hand made to replace a missing natural hand. When the entire ear or nose is missing it is often more desirable to replace these missing organs with prostheses rather than to attempt plastic surgery.

The step by step technique of producing prostheses was discussed and presented in the motion pictures. Patients were shown with the artificial organs in place.

In addition to this work the making of dies and counter dies for the cast chip-bone method of reconstructing cranial defects was discussed.

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* From the Department of Art, School of Medicine.

ONE HUNDRED AND FORTY-EIGHTH PROGRAM MEETING

The One Hundred and Forty-Eighth Program Meeting was held on Wednesday, January 30, 1946, at 4:00 P.M. in the Bressler Lecture Hall. A paper on the "Influence of Posture and Exercise on Water Balance in the Normal Male" was presented by Dietrich C. Smith, Department of Physiology, School of Medicine, University of Maryland. Another paper on "Influence of Posture and Exercise on Urine Flow in Diabetes Insipidus" by William R. Amberson, Department of Physiology, School of Medicine, University of Maryland was also presented at this meeting.

INFLUENCE OF POSTURE AND EXERCISE ON WATER BALANCE IN THE NORMAL MALE*

DIETRICH C. SMITH, PH.D.

Studies on the water balance of normal male medical students were made while reclining, standing, sitting and before and after exercise. Water was given at the rate of 100 cc. every 15 minutes during the 3 or 4 hour period of the experiment. Room temperature (usually about 25° C.) was maintained throughout unless otherwise noted. While reclining the subjects usually dehydrated, losing on the average about 400 grams in 3 hours. Urine specific gravity decreased as indicated by chloride concentration. On standing a marked postural oliguria was observed with an increase in urine specific gravity. In some instances urine flow virtually ceased during the hour of observation.

The same group of subjects while reclining for 3 hours at 38° C. maintained their weight practically constant on the average. Subjects kept at 15° C. for 3 hours showed no increase in weight loss over those kept at 25° C.

Subjects sitting quietly all showed a weight gain during a two hour observation period. Exercise for 15 minutes at the end of this period led to further water retention which persisted while sitting for 1 hour after the exercise.

INFLUENCE OF POSTURE AND EXERCISE ON URINE FLOW IN DIABETES INSIPIDUS†

WILLIAM R. AMBERSON, PH.D.

Verney and his collaborators have argued that exercise oliguria arises from stimulation of the posterior pituitary by way of the hypothalamus, which is excited by the emotional state. An increased secretion of pitressin then brings about greater tubular reabsorption of water in the kidney. Verney has shown that the oliguria occurs after complete denervation of the kidney. A renal vasoconstriction by nervous action therefore cannot be the cause.

Verney's explanation of exercise oliguria has been widely accepted, but alternative possibilities come to mind, which was thought well to explore. It was considered that a test of the Verney theory might be made in human cases of diabetes insipidus, in which posterior lobe function is absent or very subnormal and water intake and urine flow very large. In two such cases it was found that a change from a reclining position to exercise upright on a bicycle ergometer produced a great fall in urine flow. This was more marked in heavily hydrated normal human subjects, which persisted for several hours after a return to the reclining position. During this relative oliguria the urine, previously very dilute (S.G. 1.002 to 1.004) became more concentrated (as high as S.G. 1.007). A less marked oliguria appeared when the subject stood erect without exercise, as also in hydrated normal subjects.

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* From the Department of Physiology, School of Medicine.

† From the Department of Physiology, School of Medicine.

It would appear, therefore, that the Verney theory can at best be only a partial explanation of exercise oliguria, and that other factors than an increased pitressin secretion must simultaneously operate. The concentration of the plasma proteins were studied before, during and after exercise, believing that a hemoconcentration might so raise the colloidal osmotic pressure of the blood as to diminish glomerular filtration and increase tubular reabsorption of water. Such an increased concentration is indeed present, immediately after the exercise, in both normal people and in diabetes insipidus cases, and may be a factor in producing the oliguria. Upon reclining, however, the plasma protein concentration rapidly returns to normal and then falls slightly below at a time when oliguria is still present. It appears, therefore, that some other factor, presumably humoral in nature, is also operating to produce the oliguria. Its nature is not disclosed by these experiments.

ONE HUNDRED AND FORTY-NINTH PROGRAM MEETING

The One Hundred and Forty-Ninth Program Meeting was held on Wednesday, February 20, 1946, at 4:00 P.M. in the Bressler Lecture Hall. A paper on "The Pharmacology of a New Series of Choline Salts" was presented by Frederick K. Bell and C. Jelleff Carr, Department of Pharmacology, School of Medicine, University of Maryland. Another paper on "The Effect of Commercial Growth Complex upon the Oral Structures of Normal Rats" by Burton R. Pollack, Department of Anatomy, School of Dentistry, and Sylvia L. Pollack, Department of Physiology, School of Medicine, University of Maryland was also presented at this meeting.

THE PHARMACOLOGY OF A NEW SERIES OF CHOLINE SALTS

Frederick K. Bell, Ph.D. and C. Jelleff Carr, Ph.D.*

The nitrate ester of choline perchlorate was prepared during an investigation of choline compounds in a plant extract. The paucity of information on the inorganic esters of this important base and the stability of the perchlorate salts of choline prompted an investigation of these compounds. The perchlorate salts occur as white crystalline substances having sharp melting points. They are non-hygroscopic and are easily purified by recrystallization from hot water or alcohol. Pharmacologically these salts are qualitatively similar to choline and acetyl choline chloride. Acetyl choline perchlorate is equally as potent as a depressor as acetyl choline chloride and is more stable in solution or as the dry crystalline form. The nitrate ester of choline perchlorate is approximately one-half as potent as acetyl choline. This compound is not affected by choline esterase. In varied experiments on smooth muscle of the rat, on the eye of the rabbit and on the blood pressure of the dog these salts compare favorably with the chlorides or bromides of choline and acetyl choline and in addition are more stable. It is suggested that because of their physical stability these salts may find applications in therapeutics.

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* From the Department of Pharmacology, School of Medicine, University of Maryland.

THE EFFECT OF COMMERCIAL GROWTH COMPLEX UPON THE ORAL STRUCTURES OF NORMAL RATS†‡

Burton Robert Pollack and Sylvia L. Pollack

The exact nature of the changes produced in the oral cavity in experimental giantism has not been reported. It was the object of this experiment to note those changes. Mature female rats were selected for the experiment. Intraperitoneal injections of Growth Complex** (1 to 4 rats units daily) were administered to supplement the normal secretion of the growth factor by the anterior lobe of the pituitary body. To facilitate the osseous studies, injections of alizarine red S (75 mgm./kgm. of body weight) were made. Individual weight records were computed daily, and at the end of the 56th day the animals were sacrificed.

Gross and microscopic studies were made of the tongue, gingival tissue, sub-maxillary glands, decalcified mandible, whole mandible, and ground sections of the incisors. The following results were noted:

1. The average weight gain of the experimental animals was 16.4 grams more than that of the control group.
2. The experimental group showed no qualitative changes in the teeth, gingival tissue, tongue, or sub-maxillary glands.
3. Measurements of the average daily rate of dentin deposition, length of incisors, and the rate of formation of new bone at the "growing points" of the mandible revealed an over-all increase in the experimental group as compared with the measurements of the control group.

During the course of the experiment it was also noted that a marked diuresis resulted from the administration of the growth complex.

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† From the Department of Anatomy, University of Maryland, School of Dentistry.

‡ Read at the meeting of the University of Maryland Biological Society, February 20, 1946.

** Secured from the Armour Laboratories.

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The names listed above are officers for the term beginning July 1, 1945 and ending June 30, 1947

ITEMS

Comdr. Walter J. Keefe, Class of 1931, has recently been released from active duty in the Medical Corps of the U.S. Navy and has returned to the active practice of medicine in Hartford, Conn. His most recent tour of duty prior to release was upon the hospital ship U.S.S. Consolation, a unit of the 5th Fleet, in the Asiatic-Pacific Theater of operations.

Major Andrew D. Taylor, Class of 1934, has received his honorable discharge and has returned to civilian status.

Major Taylor entered active service on July 21, 1942 and was stationed at Boca Raton Army Field as a medical officer in the Station Hospital. For the last four months he served as chief of the medical service.

Prior to his call to duty, Major Taylor was a practicing physician in Charlotte, N. C.

The Sugar Research Foundation of New York has awarded a grant of $1,500 to the Department of Pharmacology, School of Medicine, University of Maryland, to study the fate of saccharic acid in the animal body. The work is under the direction of Dr. C. Jelleff Carr, Associate Professor of Pharmacology.

OBITUARIES

CAPT. JOHN R. MAGRUDER

Capt. John R. Magruder, Class of 1939, died on August 22, 1945 in the Phillipine Islands. The cause of his death is not known at this time. He had been in the Army for three years and during most of the time was stationed in the Pacific area.

GEORGE E. McPHERSON, M.D.

Dr. George E. McPherson, Class of 1904, aged sixty-eight, retired superintendent of the Belchertown State School, died December 1, 1945 at his home in Amherst, Mass. He directed the Belchertown school from 1922 to 1943, when he retired and moved to Amherst, Mass.

Born in Cambridge on November 7, 1876, Dr. McPherson attended the Foxboro High School, from which he graduated in 1894. In 1904 he received his degree in medicine from the School of Medicine, University of Maryland. Following his graduation he was intern and house officer at the Carney Hospital in South Boston, also a member of the staff at Sturdy Memorial Hospital in Attleboro, and later acting superintendent of the Foxboro State Hospital. He also served as assistant executive officer at the Psychopathic Hospital in Boston, and was assistant superintendent at the Medford State Hospital.

During World War I Dr. McPherson served in the Medical Corps, was commissioned a major and served as divisional psychiatrist. Following the war he served as assistant to the commissioner of mental diseases from 1919 to 1922, and in 1922 was appointed superintendent of the Belchertown State School.

He was a member of the American Medical Association, the American Psychiatric Association, a past president of the American Association on Mental Deficiency, a member of the American Association of Military Surgeons, the New England Society for Psychiatry, and the Massachusetts Medical Society.

SAMUEL T. R. REVELL, M.D.

Dr. Samuel T. R. Revell, aged sixty-four, Class of 1905, died at Louisville, Ga. where he made his home since graduating from the School of Medicine of the University of Maryland. Dr. Revell's father, Dr. Henry M. Revell, and his grandfather, Dr. William T. Revell, were both graduates from the same medical school in the classes of 1876 and 1847 respectively.

In addition, Dr. S. T. R. Revell had two sons who graduated from the

School of Medicine of the University of Maryland. They are Drs. Samuel T. Revell, Jr., Class of 1937, and Walter J. Revell, Class of 1941.

CHESTER T. STEWART, M.D.

One of the oldest practicing physicians and surgeons on the Niagara Frontier, Dr. C. T. Stewart, P. & S. Class of 1882, died at his home after an illness of two months. He was eighty-four.

Born in Lawrenceville, Pa., Dr. Stewart received his doctor's degree when he was twenty-one. Later he did postgraduate work at Columbia University.

When he was only twenty-three he held the position of pension examiner at the Soldiers Home in Bath during President Grover Cleveland's first term and also held it during Cleveland's second term. In addition, he was health officer for Steuben County while at Bath.

More than fifty years ago, Dr. Stewart moved to Buffalo and until his illness was active as a general practitioner and gynecologist. He was a member of county, state, and national medical societies.

Anderson, George, Alpha, Ohio; P. & S., class of 1891; aged 78; died, October 19, 1945, of uremia.

Bishop, L V., Lancaster, S. C.; B.M.C., class of 1893; aged 74; died, October 9, 1945.

Bonelli, Nicholas William, Baltimore, Md.; Class of 1928; aged 43; died, August 14, 1945, of meningococcemia.

Dodd, Benjamin Roscoe, Wake Forest, N. C.; class of 1925; aged 46; died recently of coronary thrombosis.

Donohue, Jeremiah Joseph, Worchester, Mass.; P & S., class of 1907; aged 72; died, August 4, 1945, of chronic diffuse myocarditis.

Gostin, Bernard S, Macon, Ga.; P. & S., class of 1903; aged 65; died, August 28, 1945, of coronary occlusion.

Irwin, Hammer Carson, Orange, Tex.; class of 1905; aged 67; served during World War I; died, August 6, 1945, of coronary arteriosclerosis, pulmonary atelectasis, and emphysema.

Lambert, John Francis, Newark, N. J.; B.M.C., class of 1903; aged 66; died, September 12, 1945, of cardiac failure and arteriosclerosis.

Patrick, James McLaughlin, Nashua, N. H.; B.M.C., class of 1906; aged 67; died, September 8, 1945, of acute dilatation of the heart and arteriosclerosis.

Price, Samuel Jackson, Queenstown, Md.; class of 1909; served during World War I; aged 58, died, July 25, 1945, of chronic emphysema and endocarditis.

Seidel, Albert Newton, Reading, Pa.; B.M.C., class of 1891; aged 78; died, June 28, 1945, of coronary thrombosis and influenzal pneumonia.

Simmons, John Gorse, New York City; P. & S., class of 1891; aged 77; died, September 28, 1945, of arteriosclerotic heart disease.

Spinks, Joseph McArthur, Oak Hill, W. Va.; P & S., class of 1912; aged 58; died, August 17, 1945, of epidermoid carcinoma of the esophagus.

Walsh, Anthony T., Scranton, Pa.; B.M.C., class of 1902; aged 69; served during World War I; died, October 12, 1945, of coronary thrombosis.

INDEX TO VOLUME 30

Abortion, therapeutic, Isadore A. Siegel and Capt. Schuyler G. Kohn, M.C., A.U.S.. 125
Agnew, Rear Admiral W. J. C., (MC) U.S.N. 100
Alumni Association Section 56, 114, 155, 210
Aorta, rupture of, into the third part of the duodenum, Lieut. David K. Worgan, M.C., A.U.S. 130
Appleby, George S. 140

Ballenger, Edgar G.—Obituary 165
Bell, Major James Russell—Obituary 66
Boteler, William C.—Obituary 165
Brantigan, O. C. 32
Bubert, Howard M. 46

Carr, C. Jelleff 150
Commencement address, W. J. C. Agnew 100
Curare in anesthesia, Samuel Rochberg 192

Department of Obstetrics, School of Medicine, University of Maryland, 1944 Annual Report 90
Department of Pharmacology, activities during the war years, C. Jelleff Carr 150
Douglass, Louis H. 90

Esophageal anastomosis following resection of the middle third of the esophagus for carcinoma, O. C. Brantigan 32
Ethylene disulfonide in bronchial asthma. A preliminary report, Leonard T. Kurland and Howard M. Bubert 46

Graduate study at the School of Medicine, report on a proposed plan for 145
Guyther, J. Roy 84

Histoplasmosis: a summary of the known facts about the disease, David K. Worgan 69
Horn, H. A. 169

Jannarone, Capt. Lewis H.—Obituary 66

Kaltreider, D. Frank 1
Kidneys, compensatory mechanisms related to the, D. L. Reimann 121
Kohn, Capt. Schuyler G., M.C., A.U.S. 125
Kurland, Leonard T. 46

Löffler's syndrome. Review of the literature and report of a case, Lawrence M. Serra 11
Lung, primary carcinoma of the, including a clinico pathologic report of forty-five cases at the University Hospital from 1934 to 1946, H. A. Horn 169

Magruder, Capt. John R.—Obituary 211
Maternal deaths and the lessons they teach us, M. Alexander Novey 39

McPherson, George E.—Obituary........ 211
Mech, Major Karl F., M.C., A.U.S........ 185
Metastatic carcinoma simulating the Guillan-Barre syndrome, a case of, J. Roy Guyther........ 84
Monthly Meetings of the University Hospital Staff:
  Boeck's sarcoid versus tuberculosis, Francis A. Ellis........ 112
  Chemotherapy in tuberculosis, Lawrence M. Serra........ 204
  Clinical uses of furacin, E. Roderick Shipley........ 153
  Congenital glaucoma, F. Edwin Knowles, Jr........ 53
  Dysmenorrhea, W. K. Diehl........ 53
  Functional ovarian tumors, Thomas L. Wilson........ 53
  Streptomycin, Margaret H. D. Smith........ 204
Murray, John Allen—Obituary........ 66

Nichols, Samuel A.—Obituary........ 166
Norris, J. Edward—Obituary........ 166
Novey, M. Alexander........ 39

Obituaries........65, 118, 165, 211
Obstetric case history........51, 144, 200
Osteoid-sarcoma associated with myositis ossificans. A case report, Allen V. Voshell and George S. Appleby........ 140

Placenta accreta, D. Frank Kaltreider........ 1
Postgraduate courses of the School of Medicine, University of Maryland........ 201
Proceedings of the University of Maryland Biological Society:
  One Hundred and Forty-Second Program Meeting........ 54
  One Hundred and Forty-Third Program Meeting........ 55
  One Hundred and Forty-Fourth Program Meeting........ 55
  One Hundred and Forty-Fifth Program Meeting........ 154
  One Hundred and Forty-Sixth Program Meeting........ 154, 205
  One Hundred and Forty-Seventh Program Meeting........ 206
  One Hundred and Forty-Eighth Program Meeting........ 207
  One Hundred and Forty-Ninth Program Meeting........ 208
Publications by the Staff of the School of Medicine, University of Maryland, 1944.. 105
Pulmonary manifestations of brucellosis: report of a case, Frank M. Shipley........ 80
Pushkin, Benjamin—Obituary........ 118

Reimann, D. L........ 121
Revell, Samuel R. T.—Obituary........ 211
Rochberg, Samuel........ 192
Roentgenology in Baltimore, Brief history of,........ 195

Serra, Lawrence M........ 11
Shipley, Frank M........ 80
Siegel, Isadore A........ 125
Stewart, Chester T.—Obituary........ 212
Surgery, reconstructive, patient's part in, Major Karl F. Mech, M.C., A.U.S........ 185

Thorkelson, Jacob—Obituary........ 166

Voshell, Allen V.. 140

Walton, Henry J.. 195
Weed, Brig. Gen. Frank W., U.S.A. (Ret.)—Obituary.............................. 165
Worgan, David K..69, 130
Wyse, W. P. E.—Obituary.. 67

D